

Kentucky Employees Retirement System

*Actuarial Valuation and Review
as of June 30, 2003*

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November 6, 2003

*Board of Trustees Kentucky Retirement Systems
Kentucky Employees Retirement System
Perimeter Park West 1260 Louisville Road
Frankfort, Kentucky 40601-6124*

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2003. It summarizes the actuarial data used in the valuation, establishes the funding requirements for the fiscal year beginning July 1, 2004 and analyzes the preceding year's experience.

The census information on which our calculations were based was prepared by the System and the financial information was provided by the Auditor. That assistance is gratefully acknowledged.

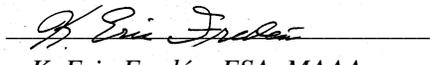
This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

THE SEGAL COMPANY

By: 
*Leon F. (Rocky) Joyner, Jr., ASA, MAAA
Vice President and Actuary*


*K. Eric Fredén, FSA, MAAA
Associate Actuary*

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SECTION 1: Valuation Summary for the Kentucky Employees Retirement System

Purpose

This report has been prepared by The Segal Company to present a valuation of the Kentucky Employees Retirement System as of June 30, 2003. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Board;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2003, provided by the Board;
- The assets of the Plan as of June 30, 2003, provided by the Auditor;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

- The Kentucky Employees Retirement System's basic financial goal is to establish contributions which fully fund the system's liabilities, and which, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.
- The retirement contribution rate is determined using the Entry Age Normal Cost (EANC) Method. Under this method the employer contribution required is the sum of the normal cost, administration expenses and the sum of the 30-year amortization payments established each valuation due to changes in the Unfunded Actuarial Accrued Liability.
- The medical insurance contribution rate is determined in a similar method except that the actual contribution rate is determined by increasing the prior biennium rate by an amount necessary to raise the insurance rate to the full EANC amount by the year 2016.
- The rates calculated in this report may be adopted by the Board for July 1, 2004 through June 30, 2005.

SECTION 1: Valuation Summary for the Kentucky Employees Retirement System

- > The following summarizes the required contributions for the year beginning July 1, 2004 and compares them to the prior valuation amounts.

Non-Hazardous		
<u>Plan</u>	<u>July 1, 2004</u>	<u>July 1, 2003</u>
	<u>Rate</u>	<u>Rate</u>
Retirement	5.11%	2.86%
Insurance	<u>5.18</u>	<u>4.67</u>
Total	10.29%	7.53%

Hazardous		
<u>Plan</u>	<u>July 1, 2004</u>	<u>July 1, 2003</u>
	<u>Rate</u>	<u>Rate</u>
Retirement	7.26%	7.37%
Insurance	<u>12.21</u>	<u>11.47</u>
Total	19.47%	18.84%

- > The increase in total rate is due to:

Non-Hazardous	
Investment loss	1.71%
Retiree COLA	.33
Insurance Phase-in	.51
Other experience	<u>.21</u>
Total change	2.76%

Hazardous	
Investment loss	.99%
Retiree COLA	.15
Insurance Phase-in	.74
Other experience	<u>-1.25</u>
Total change	.63%

SECTION 1: Valuation Summary for the Kentucky Employees Retirement System

- The actuarial valuation report as of June 30, 2003 is based on financial information as of that date. Changes in the value of assets subsequent to that date, to the extent they exist, are not reflected. Declines in asset values will increase the actuarial cost of the Plan, while increases will decrease the actuarial cost of the Plan. Because the actuarial value of assets involves a smoothing method, changes in market value are not fully reflected immediately in the actuarial value of assets. Rather, that effect is spread over a period of years.
- As indicated in Section 2, Subsection B of this report, the total unrecognized investment losses as of June 30, 2003 are

Non-Hazardous

<u>Plan</u>	<u>Unrecognized investment losses as of 6/30/2003</u>
Retirement	\$1,421,875,647
Insurance	66,610,109

Hazardous

<u>Plan</u>	<u>Unrecognized investment losses as of 6/30/2003</u>
Retirement	\$65,401,031
Insurance	25,926,087

These investment losses will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 8.25% per year (net of expenses) on a market value basis will result in investment losses on the actuarial value of assets in the next few years. Therefore, if the actual market return is equal to the assumed 8.25% rate and all other actuarial assumptions are met, the contribution requirements would still increase in each of the next few years.

SECTION 1: Valuation Summary for the Kentucky Employees Retirement System

Summary of Key Valuation Results Non – Hazardous	Valuation Date	
	June 30, 2003	June 30, 2002
Contribution rates for next fiscal year:		
Retirement	5.11%	2.86%
Insurance	<u>5.18</u>	<u>4.67</u>
Total	10.29%	7.53%
Funded status as of valuation date:		
Retirement		
Actuarial Accrued Liability	\$6,520,463,188	\$6,026,094,764
Actuarial Value of Assets	\$6,351,318,832	\$6,654,084,196
Funded Ratio on Actuarial Value of Assets	97.41%	110.42%
Market Value of Assets	\$4,929,443,185	\$5,005,190,948
Funded Ratio on Market Value of Assets	75.60%	83.06%
Insurance		
Actuarial Accrued Liability	\$2,093,210,321	\$1,907,683,881
Actuarial Value of Assets	\$553,885,082	\$521,250,455
Funded Ratio on Actuarial Value of Assets	26.46%	27.32%
Market Value of Assets	\$487,274,973	\$465,664,515
Funded Ratio on Market Value of Assets	23.28%	24.41%
Demographic data as of valuation date:		
Number of retired participants and beneficiaries	27,233	26,703
Number of vested former members	3,456	3,415
Number of former members due a refund	5,785	14,299
Number of active members	49,158	48,555
Total salary	\$1,658,604,696	\$1,597,344,487
Average salary	\$33,740	\$32,898

SECTION 1: Valuation Summary for the Kentucky Employees Retirement System

Summary of Key Valuation Results Hazardous	Valuation Date	
	June 30, 2003	June 30, 2002
Contribution rates for next fiscal year:		
Retirement	7.26%	7.37%
Insurance	<u>12.21</u>	<u>11.47</u>
Total	19.47%	18.84%
Funded status as of valuation date:		
Retirement		
Actuarial Accrued Liability	\$356,879,133	\$322,069,164
Actuarial Value of Assets	\$385,925,722	\$376,384,302
Funded Ratio using Actuarial Value of Assets	108.14%	116.86%
Market Value of Assets	\$320,524,691	\$301,799,829
Funded Ratio on Market Value of Assets	89.81%	93.71%
Insurance		
Actuarial Accrued Liability	\$283,178,335	\$236,819,050
Actuarial Value of Assets	\$151,459,500	\$135,874,582
Funded Ratio on Actuarial Value of Assets	53.49%	57.37%
Market Value of Assets	\$125,533,413	\$109,769,410
Funded Ratio on Market Value of Assets	44.33%	46.35%
Demographic data as of valuation date:		
Number of retired participants and beneficiaries	1,357	1,208
Number of vested former members	145	127
Number of former member due a refund	637	946
Number of active members	4,189	4,211
Total salary	\$129,088,956	\$125,371,604
Average salary	\$30,816	\$29,772

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

A. MEMBER DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, vested terminated members, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these member groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B, and C.

Active Members

Plan costs are affected by the age, years of service and salaries of active members. In this year's non-hazardous valuation, there were 49,158 active members with an average age of 42.2, average years of service of 10.0 years and average salaries of \$33,740. The 48,555 active members in the prior valuation had an average age of 41.5, average service of 10.1 years and average salaries of \$32,898.

In the hazardous plan there were 4,189 active members with an average age of 41.6, average years of service of 7.2 years and average salaries of \$30,816. The 4,211 active members in the prior valuation had an average age of 41.8, average service of 6.9 years and average salaries of \$29,772.

Inactive Members

There were 3,456 non-hazardous members with a vested right to a deferred or immediate vested benefit.

In addition, there were 5,785 members entitled to a return of their employee contributions.

For the hazardous plan there were 145 members with a vested right to a deferred or immediate vested benefit.

In addition, there were 637 members entitled to a return of their employee contributions.

Retired Participants and Beneficiaries

As of June 30, 2003, 23,476 non-hazardous retired participants and 3,757 beneficiaries were receiving total monthly benefits of \$32,754,064. For comparison, in the previous valuation, there were 22,948 retired participants and 3,755 beneficiaries receiving monthly benefits of \$29,147,648.

For the hazardous plan there were 1,185 retired participants and 172 beneficiaries receiving total monthly benefits of \$1,081,227. For comparison, in the previous valuation, there were 1,069 retired participants and 139 beneficiaries receiving monthly benefits of \$913,271.

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

A historical perspective of how the member population has changed over the past eight valuations can be seen in this chart.

CHART 1A Non-Hazardous

Member Population: 1996 – 2003

Year Ended June 30	Active Members	Vested Terminated Members*	Retired Participants and Beneficiaries	Ratio of Non-Actives to Actives
1996	47,145	2,416	19,468	0.46
1997	46,073	2,550	20,540	0.50
1998	46,342	2,735	20,955	0.51
1999	45,824	2,978	21,941	0.54
2000	46,897	3,073	23,760	0.57
2001	47,780	3,312	25,118	0.60
2002	48,555	3,415	26,703	0.62
2003	49,158	3,456	27,233	0.62

CHART 1B Hazardous

Member Population: 1996 – 2003

Year Ended June 30	Active Members	Vested Terminated Members*	Retired Participants and Beneficiaries	Ratio of Non-Actives to Actives
1996	3,452	68	502	0.17
1997	3,532	77	585	0.19
1998	3,582	96	671	0.21
1999	3,889	96	780	0.23
2000	4,007	113	924	0.26
2001	4,228	123	1,053	0.28
2002	4,211	127	1,208	0.32
2003	4,189	145	1,357	0.36

**Excludes terminated members due a refund of employee contributions*

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

These graphs show a distribution of active members by age and by years of service.

CHART 2A Non - Hazardous

Distribution of Active Members by Age as of June 30, 2003

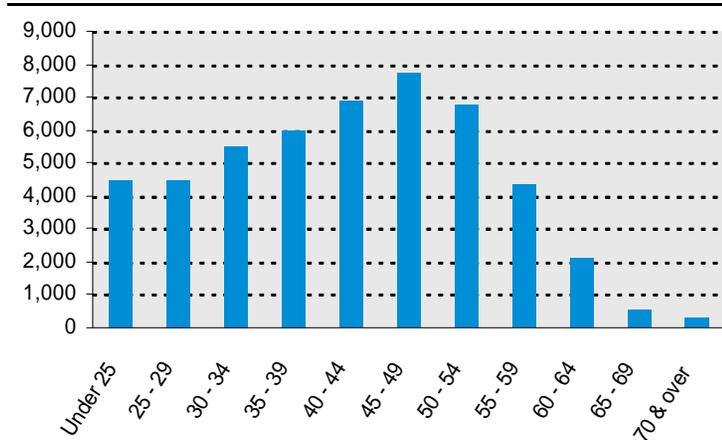


CHART 3A Non - Hazardous

Distribution of Active Members by Years of Service as of June 30, 2003

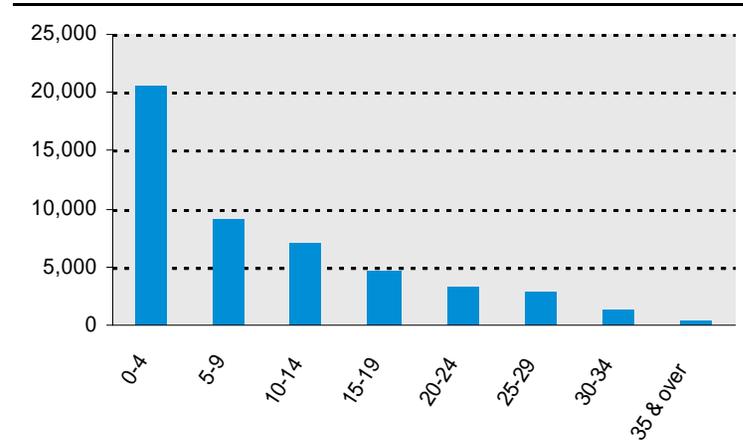


CHART 4A Non - Hazardous

Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2003

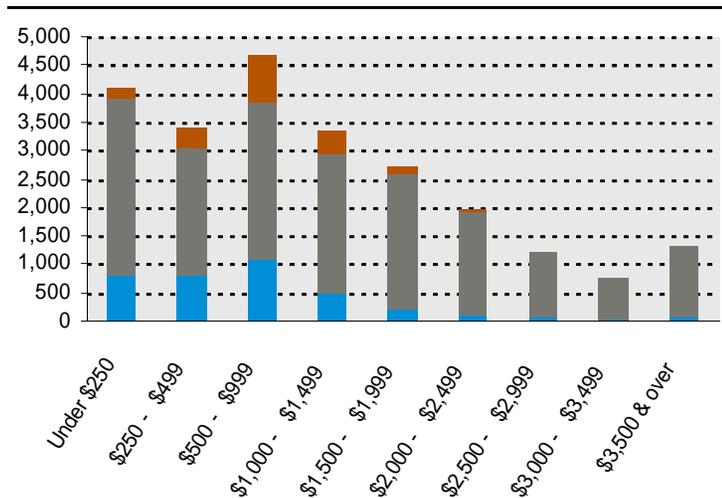
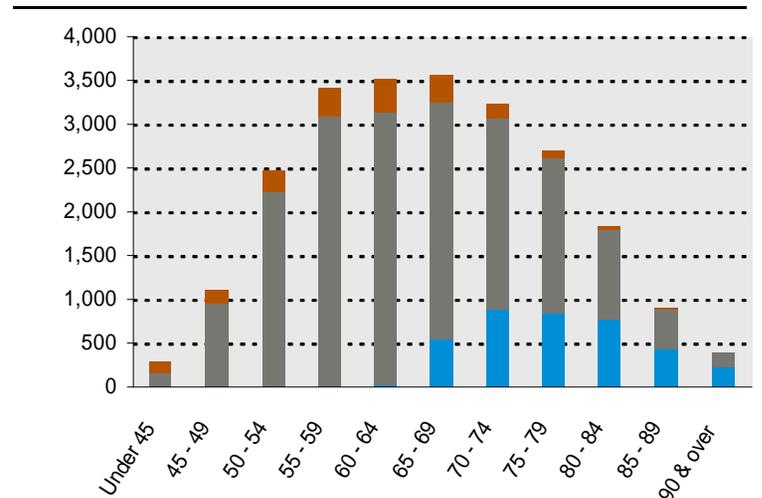


CHART 5A Non - Hazardous

Distribution of Retired Participants by Type and by Age as of June 30, 2003



These graphs show a distribution of the current retired participants based on their monthly amount and age, by type of pension.

■ Disability
■ Early
■ Normal

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

These graphs show a distribution of active members by age and by years of service

CHART 2B Hazardous
Distribution of Active Members by Age as of June 30, 2003

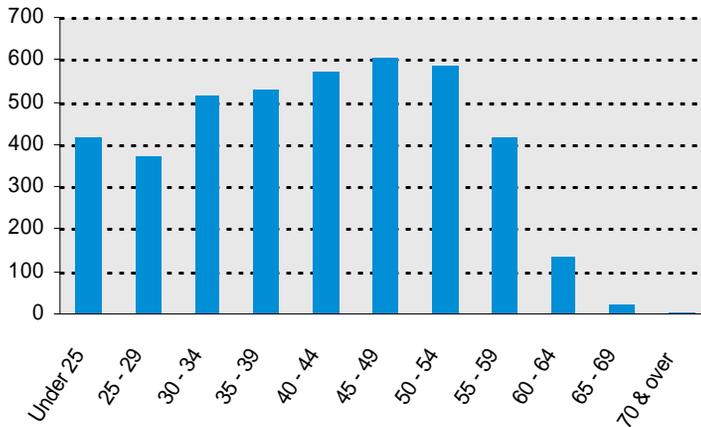


CHART 3B Hazardous
Distribution of Active Members by Years of Service as of June 30, 2003

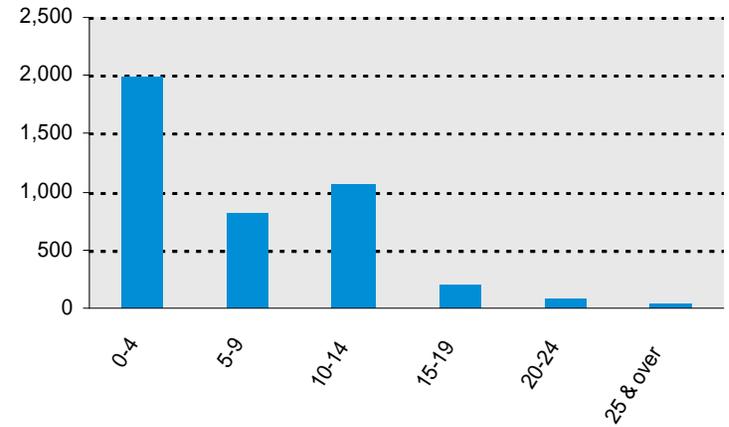


CHART 4B Hazardous
Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2003

These graphs show a distribution of the current retired participants based on their monthly amount and age, by type of pension.

■ Disability
 ■ Early
 ■ Normal

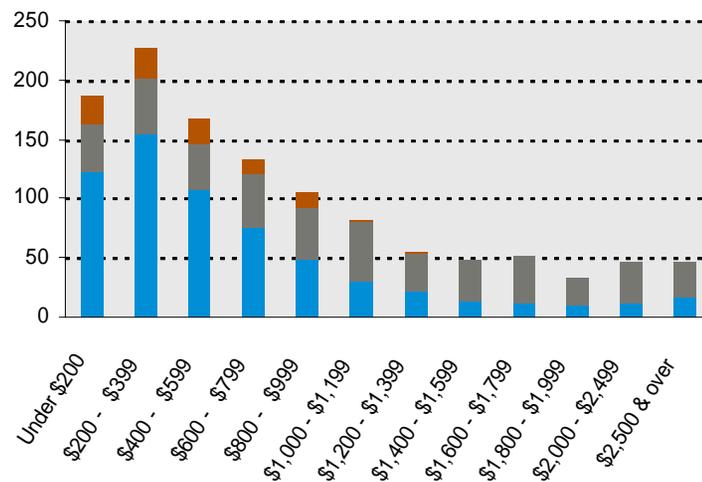
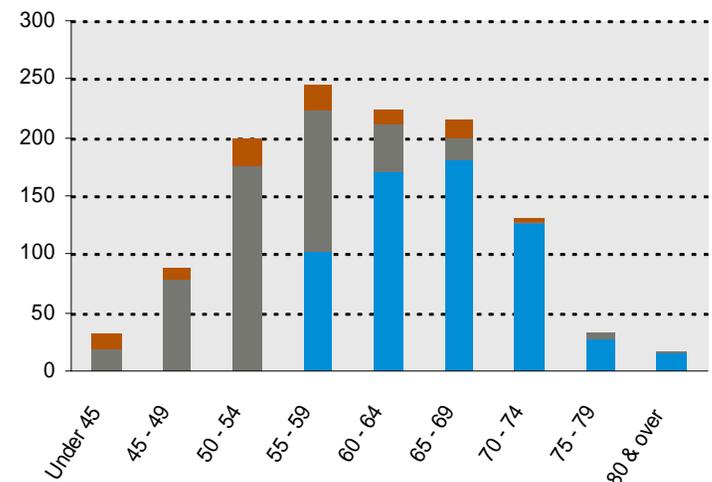


CHART 5B Hazardous
Distribution of Retired Participants by Type and by Age as of June 30, 2003



SECTION 2: Valuation Results for the Kentucky Employees Retirement System

B. FINANCIAL INFORMATION

Retirement plan funding anticipates that, over the long term, both net contributions (less administrative expenses) and net investment earnings (less investment fees) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits D, E and F.

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

The chart depicts the components of changes in the actuarial value of assets over the last seven years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

CHART 6A Non - Hazardous Retirement

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 – 2003

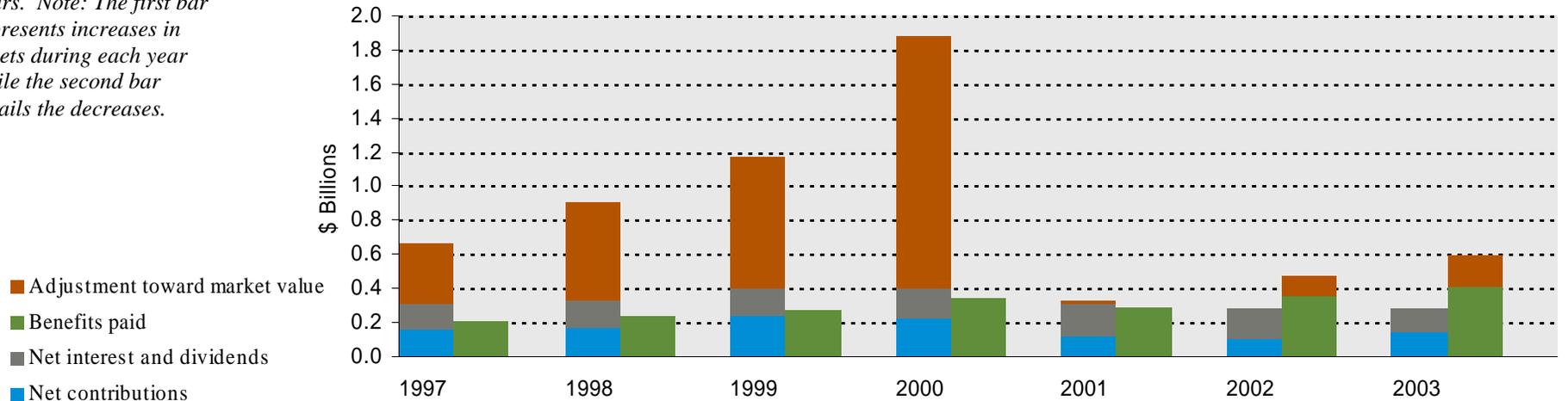
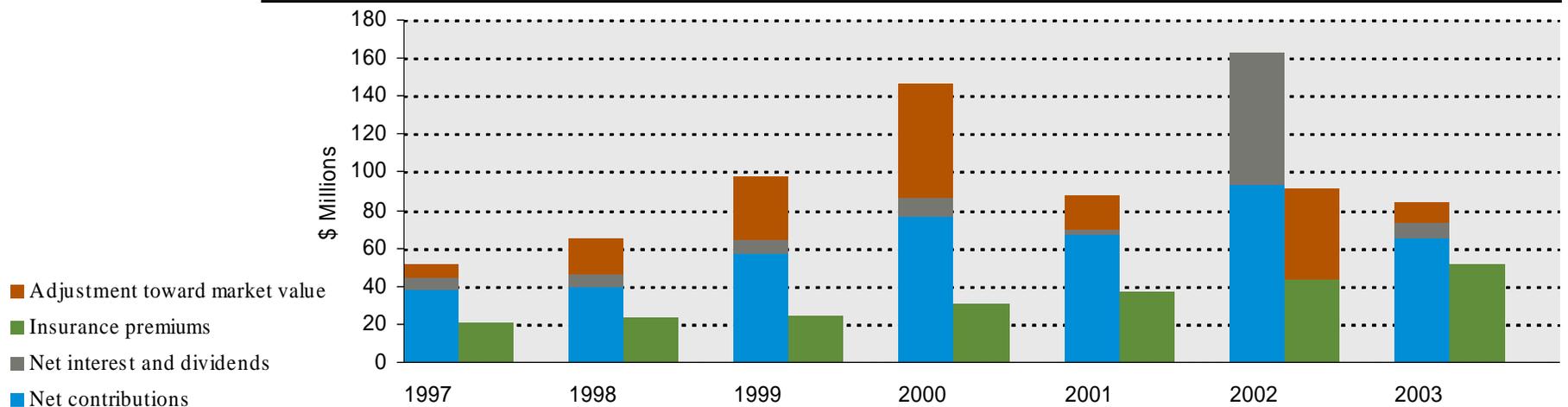


CHART 6B Non - Hazardous Insurance

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 – 2003



SECTION 2: Valuation Results for the Kentucky Employees Retirement System

The chart depicts the components of changes in the actuarial value of assets over the last seven years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

CHART 6C Hazardous Retirement

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 - 2003

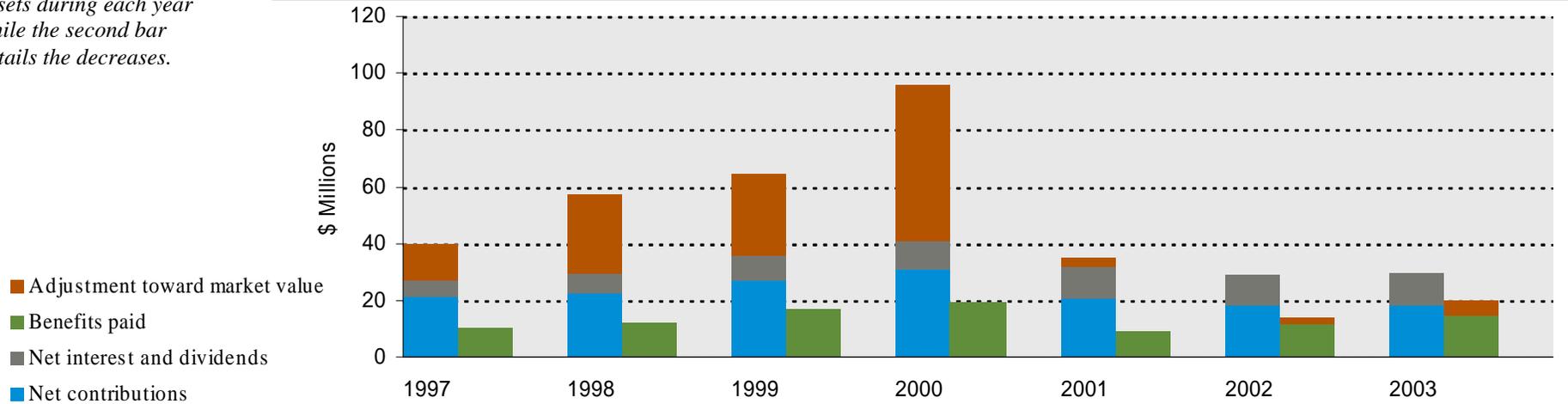
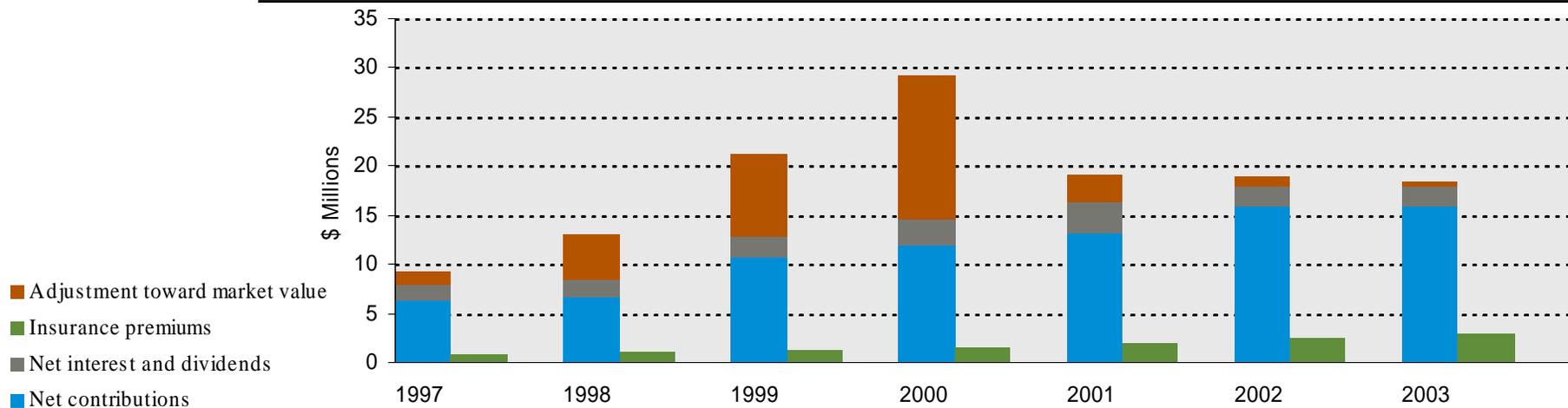


CHART 6D Hazardous Insurance

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 - 2003



SECTION 2: Valuation Results for the Kentucky Employees Retirement System

The chart shows the determination of the actuarial value of assets as of the valuation date

CHART 7A Non – Hazardous Retirement

Determination of Actuarial Value of Assets for Year Ended June 30, 2003

1. Actuarial value of Assets of June 30, 2002			\$6,654,084,196
2. Net Cash flow			(275,571,276)
3. Expected return on valuation assets			537,594,631
4. Expected valuation assets			6,916,107,552
5. Investment gain/(loss) for year ending:	Initial Amount	Amortization	
June 30, 2003	(\$337,771,120)	(\$67,554,224)	
June 30, 2002	(785,948,805)	(157,189,761)	
June 30, 2001	(1,700,223,672)	<u>(340,044,734)</u>	
Total amortization amount			(\$564,788,719)
6. Actuarial value of assets as of June 30, 2003			<u>\$6,351,318,832</u>
7. Market value of assets			\$4,929,443,185
8. Actuarial value as a percentage of market value			<u>128.8%</u>

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

The chart shows the determination of the actuarial value of assets as of the valuation date

CHART 7B Non – Hazardous Insurance

Determination of Actuarial Value of Assets for Year Ended June 30, 2003

1. Actuarial value of Assets of June 30, 2002			\$521,250,455
2. Net Cash flow			13,376,380
3. Expected return on valuation assets			43,554,937
4. Expected valuation assets			578,181,772
5. Investment gain/(loss) for year ending:	Initial Amount	Amortization	
June 30, 2003	(\$35,320,860)	(\$7,064,172)	
June 30, 2002	(19,441,916)	(3,888,383)	
June 30, 2001	(66,720,677)	<u>(13,344,135)</u>	
Total amortization amount			(\$24,296,690)
6. Actuarial value of assets as of June 30, 2003			<u>\$553,885,082</u>
7. Market value of assets			\$487,274,973
8. Actuarial value as a percentage of market value			<u>113.7%</u>

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

The chart shows the determination of the actuarial value of assets as of the valuation date

CHART 7C Hazardous Retirement

Determination of Actuarial Value of Assets for Year Ended June 30, 2003

1. Actuarial value of Assets of June 30, 2002			\$376,384,302
2. Net Cash flow			3,732,968
3. Expected return on valuation assets			31,205,691
4. Expected valuation assets			411,322,961
5. Investment gain/(loss) for year ending:	Initial Amount	Amortization	
June 30, 2003	(\$16,213,796)	(\$3,242,759)	
June 30, 2002	(40,605,179)	(8,121,036)	
June 30, 2001	(70,167,218)	<u>(14,033,444)</u>	
Total amortization amount			(\$25,397,239)
6. Actuarial value of assets as of June 30, 2003			<u>\$385,925,722</u>
7. Market value of assets			\$320,524,691
8. Actuarial value as a percentage of market value			<u>120.4%</u>

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

The chart shows the determination of the actuarial value of assets as of the valuation date

CHART 7D Hazardous Insurance

Determination of Actuarial Value of Assets for Year Ended June 30, 2003

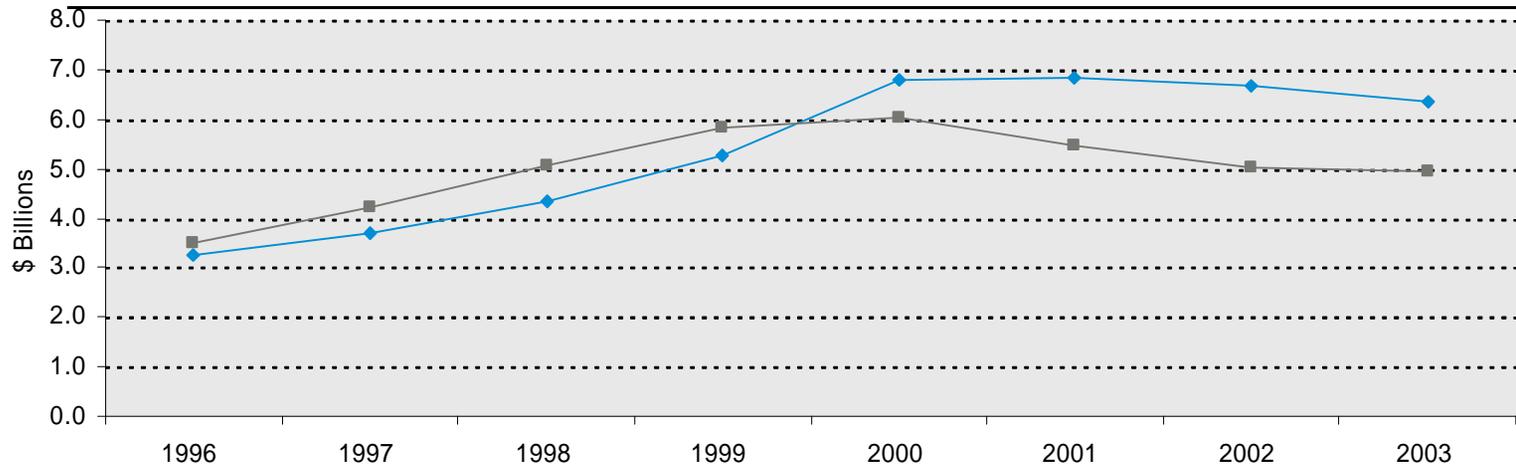
1. Actuarial value of Assets of June 30, 2002			\$135,874,582
2. Net Cash flow			12,877,511
3. Expected return on valuation assets			11,740,850
4. Expected valuation assets			160,492,944
5. Investment gain/(loss) for year ending:	Initial Amount	Amortization	
June 30, 2003	(\$8,854,359)	(\$1,770,872)	
June 30, 2002	(21,587,295)	(4,317,457)	
June 30, 2001	(14,752,573)	<u>(2,945,115)</u>	
Total amortization amount			(\$9,033,444)
6. Actuarial value of assets as of June 30, 2003			<u>\$151,459,500</u>
7. Market value of assets			\$125,533,413
8. Actuarial value as a percentage of market value			<u>120.7%</u>

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

These charts show the change in the actuarial value of assets versus the market value over the past eight years

CHART 8A Non - Hazardous Retirement

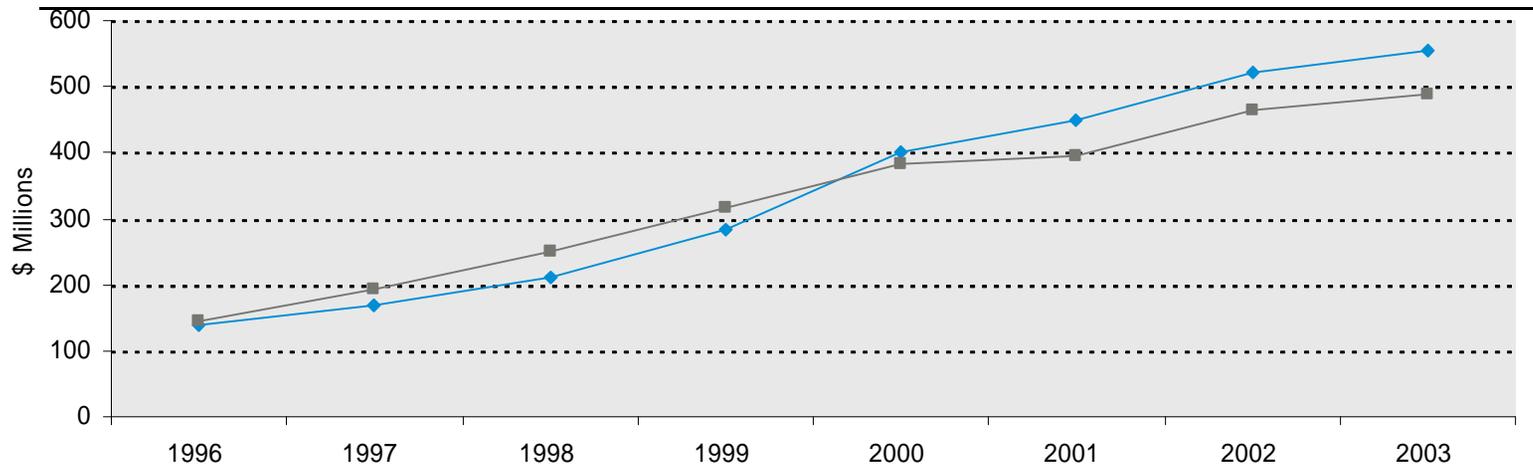
Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1996 – 2003



◆ Actuarial Value
■ Market Value

CHART 8B Non – Hazardous Insurance

Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1996 – 2003



◆ Actuarial Value
■ Market Value

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

These charts show the change in the actuarial value of assets versus the market value over the past eight years.

CHART 8C Hazardous Retirement

Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1996 - 2003

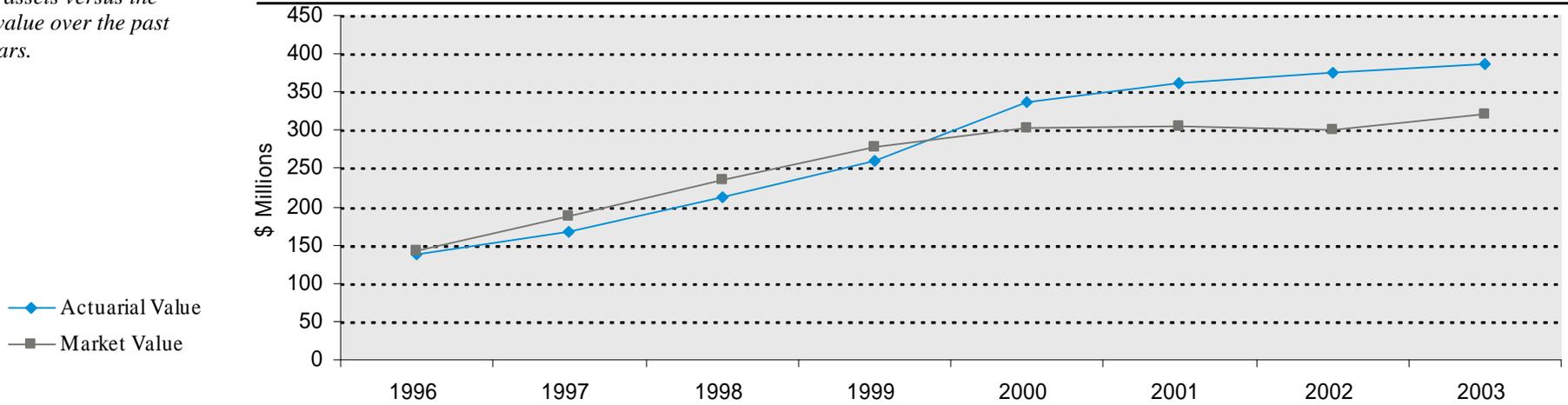
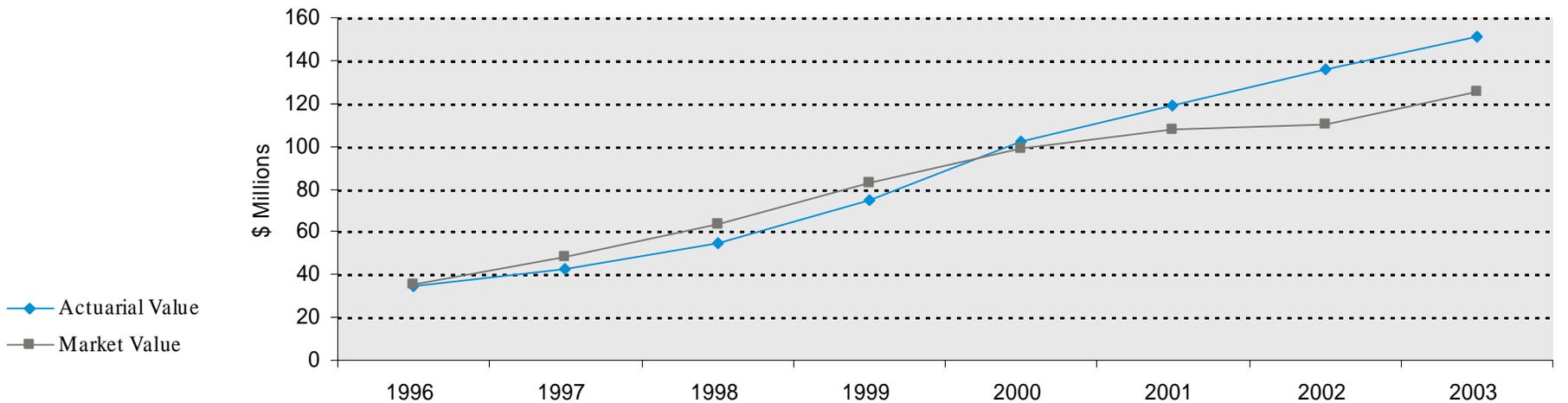


CHART 8D Hazardous Insurance

Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1996 - 2003



SECTION 2: Valuation Results for the Kentucky Employees Retirement System

C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

Chart 9 presents a summary of experience for the year. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience during the past year.

CHART 9 Actuarial Experience for Year Ended June 30, 2003	Non - Hazardous Retirement	Non - Hazardous Insurance	Hazardous Retirement	Hazardous Insurance
1. Net gain/(loss) from investments*	-\$564,788,719	-\$24,296,691	-\$25,397,238	-\$9,033,443
2. Net gain/(loss) from administrative expenses	410,287	-204,581	27,670	-18,185
3. Net gain/(loss) from other experience**	<u>-262,445,800</u>	<u>12,186,175</u>	<u>-421,336</u>	<u>-9,909,855</u>
4. Net experience gain/(loss): (1) + (2) + (3)	-\$826,824,232	-\$12,315,097	-\$25,790,904	-\$18,961,483

* Details in Chart 10

** Details in Chart 13

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Plan’s investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.25%. Chart 10 shows the investment experience for each plan for the year.

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. Chart 11, which follows, shows the rate of return on an actuarial basis compared to the market value investment return for the last seven years.

Since the actual return for the year was less than the assumed return, each plan experienced an actuarial loss during the year ended June 30, 2003 with regard to its investments.

This chart shows the gain/(loss) due to investment experience.

CHART 10 Actuarial Value Investment Experience for Year Ended June 30, 2003	Non - Hazardous Retirement	Non - Hazardous Insurance	Hazardous Retirement	Hazardous Insurance
1. Actual return	-\$27,194,088	\$19,258,247	\$5,808,452	\$2,707,407
2. Average value of assets	6,516,298,558	527,938,645	378,250,786	142,313,338
3. Actual rate of return: (1) ÷ (2)	-0.42%	3.65%	1.54%	1.90%
4. Assumed rate of return	8.25%	8.25%	8.25%	8.25%
5. Expected return: (2) x (4)	\$537,594,631	\$43,554,938	\$31,205,690	\$11,740,850
6. Actuarial gain/(loss): (1) – (5)	<u>-\$564,788,719</u>	<u>-\$24,296,691</u>	<u>-\$25,397,238</u>	<u>-\$9,033,443</u>

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

CHART 11A Non – Hazardous Retirement

Investment Return – Actuarial Value vs. Market Value: 1997 - 2003

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1997	\$146,203,000	4.55%	\$353,572,876	11.01%	\$734,397,620	20.10%	\$910,518,691	21.82%
1998	152,888,000	4.19	581,509,620	15.92	934,160,772	21.51	814,726,366	16.17
1999	156,952,000	3.61	777,208,772	17.90	1,662,814,063	31.95	296,103,000	5.12
2000	182,697,000	3.51	1,480,117,063	28.44	214,238,910	3.19	-356,720,409	-6.02
2001	190,953,000	2.84	23,285,910	0.35	57,231,322	0.85	-234,794,209	-4.38
2002	176,702,012	2.63	-119,470,690	-1.78	-27,194,088	-0.42	196,518,742	4.04
2003	<u>149,729,179</u>	2.30	<u>-176,923,267</u>	-2.72	<u>3,045,965</u>	0.06	<u>159,535,251</u>	3.92
Total	\$1,156,124,191		\$2,919,300,284		\$4,075,424,475		\$2,370,871,317	
					Average return	9.29%		2.65%

Note: Each year's yield is weighted by the average asset value in that year.

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

CHART 11B Non – Hazardous Insurance

Investment Return – Actuarial Value vs. Market Value: 1997 - 2003

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1997	\$6,266,000	4.27%	\$7,297,760	4.98%	\$13,563,760	9.25%	\$32,202,859	21.16%
1998	6,681,000	3.78	18,867,211	10.69	25,548,211	14.47	41,655,634	20.75
1999	7,812,000	3.45	33,590,703	14.85	41,402,703	18.30	32,809,846	12.31
2000	9,937,000	3.24	59,527,365	19.40	69,464,365	22.63	21,484,500	6.35
2001	3,134,000	0.76	17,691,919	4.27	20,825,919	5.03	-16,271,591	-4.09
2002	69,396,040	14.63	-47,483,602	-10.01	21,912,438	4.62	19,539,589	4.64
2003	<u>8,087,818</u>	1.53	<u>11,170,430</u>	2.12	<u>19,258,247</u>	3.65	<u>8,051,711</u>	1.70
Total	\$111,313,858		\$100,661,786		\$211,975,643		\$139,472,548	
					Average return	8.87%		3.46%

Note: Each year's yield is weighted by the average asset value in that year.

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

CHART 11C Hazardous Retirement

Investment Return – Actuarial Value vs. Market Value: 1997 - 2003

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1997	\$6,235,000	4.37%	\$12,614,790	8.85%	\$18,849,790	13.22%	\$33,085,394	22.25%
1998	7,448,000	4.33	27,633,380	16.07	35,081,380	20.41	37,614,603	19.57
1999	8,129,000	3.74	28,803,701	13.24	36,932,701	16.98	33,133,032	13.78
2000	10,191,000	3.84	55,002,145	20.72	65,193,145	24.56	11,840,783	4.16
2001	11,390,000	3.33	2,780,043	0.81	14,170,043	4.14	-7,670,713	-2.49
2002	10,843,431	2.97	-2,881,301	-0.79	7,962,130	2.18	-10,682,347	-3.46
2003	<u>11,243,712</u>	2.97	<u>-5,435,260</u>	-1.44	<u>5,808,452</u>	1.54	<u>14,775,635</u>	4.86
Total	\$65,480,143		\$118,517,498		\$183,997,641		\$112,096,387	
					Average return	8.29%		2.86%

Note: Each year's yield is weighted by the average asset value in that year.

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

CHART 11D Hazardous Insurance

Investment Return – Actuarial Value vs. Market Value: 1997 - 2003

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1997	\$1,598,000	4.32%	\$1,417,382	3.83%	\$3,015,382	8.16%	\$7,814,169	20.54%
1998	1,770,000	3.90	4,654,412	10.24	6,424,412	14.14	9,312,446	18.15
1999	2,065,000	3.48	8,430,863	14.21	10,495,863	17.69	9,787,878	14.37
2000	2,571,000	3.22	14,603,588	18.30	17,174,588	21.52	6,166,757	7.02
2001	3,134,000	2.91	2,815,835	2.61	5,949,835	5.52	-2,878,243	-2.74
2002	2,060,266	1.63	1,076,714	0.85	3,136,980	2.49	-11,232,521	-9.83
2003	<u>2,168,713</u>	1.52	<u>538,694</u>	0.38	<u>2,707,407</u>	1.90	<u>2,834,247</u>	2.44
Total	\$15,366,979		\$33,537,488		\$48,904,467		\$21,804,733	
					Average return	7.66%		0.95%

Note: Each year's yield is weighted by the average asset value in that year.

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

This chart illustrates how this leveling effect has actually worked over the years 1997 - 2003

CHART 12A Non – Hazardous Retirement

Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2003

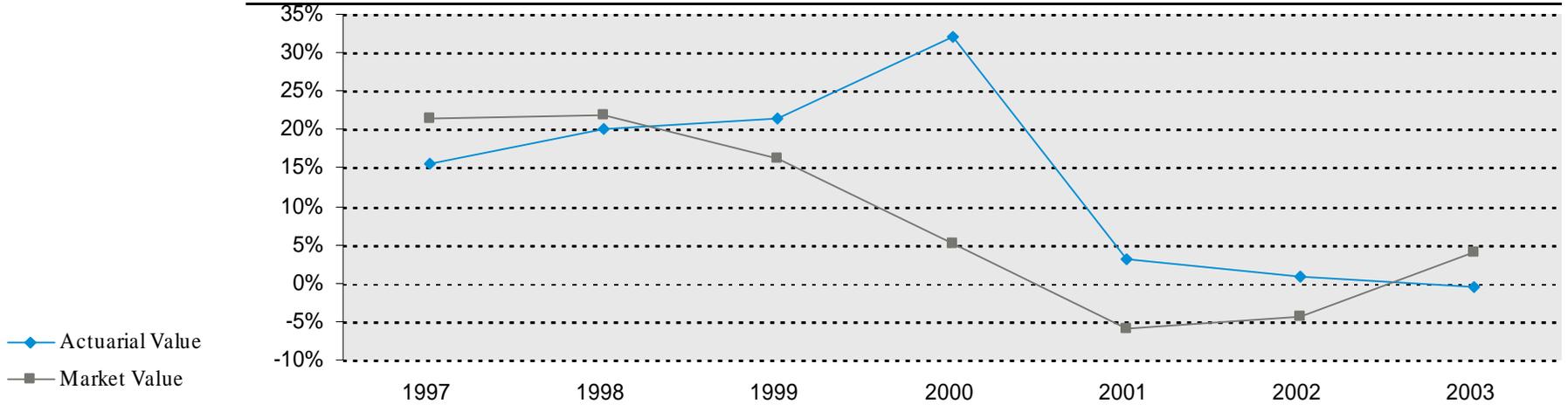
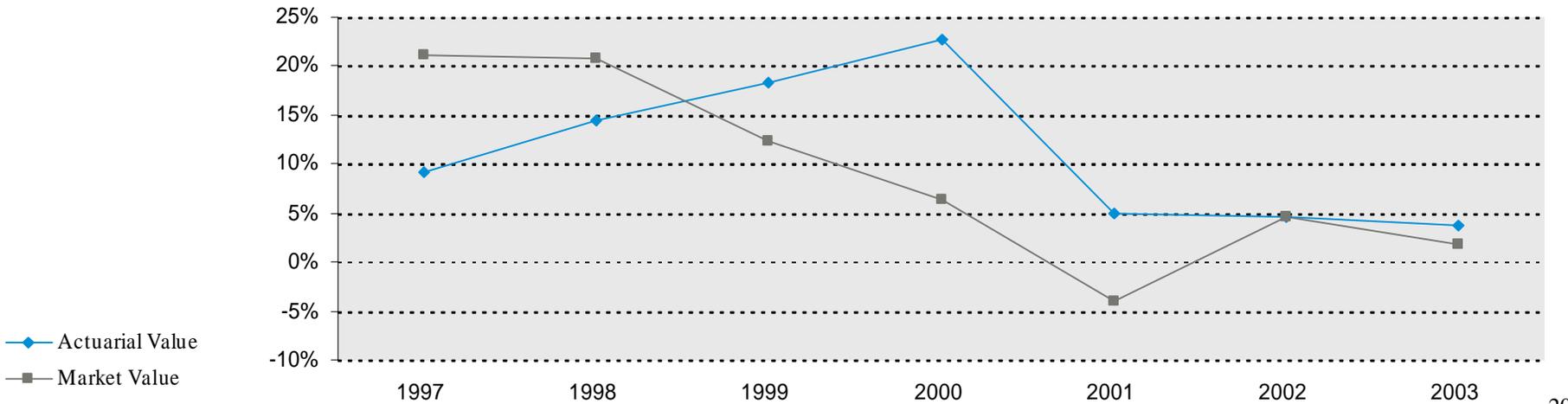


CHART 12B Non – Hazardous Insurance

Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2003



SECTION 2: Valuation Results for the Kentucky Employees Retirement System

This chart illustrates how this leveling effect has actually worked over the years 1997 - 2003 .

CHART 12C Hazardous Retirement
Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2003

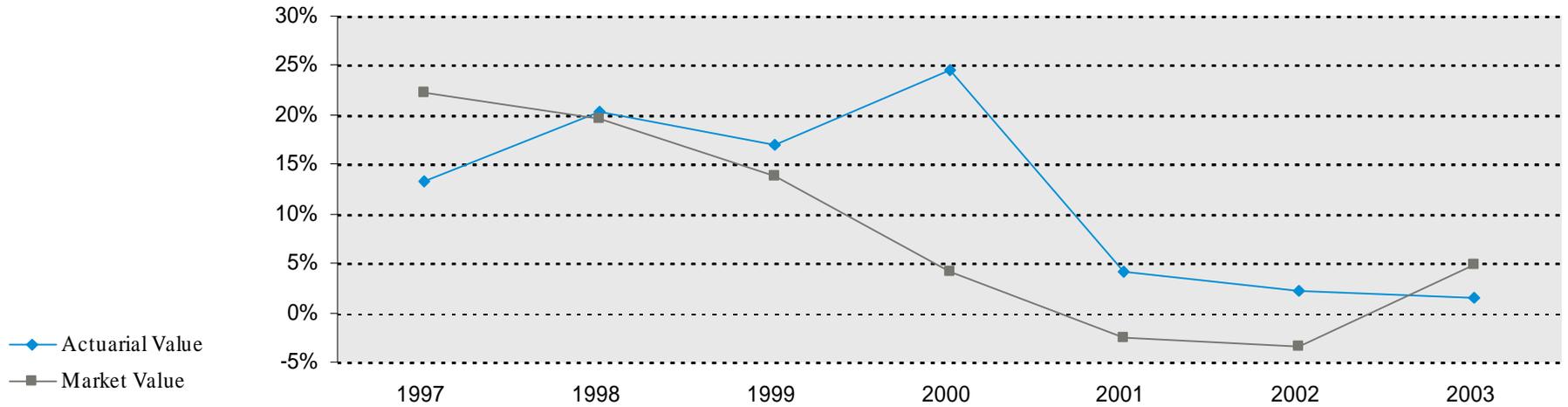
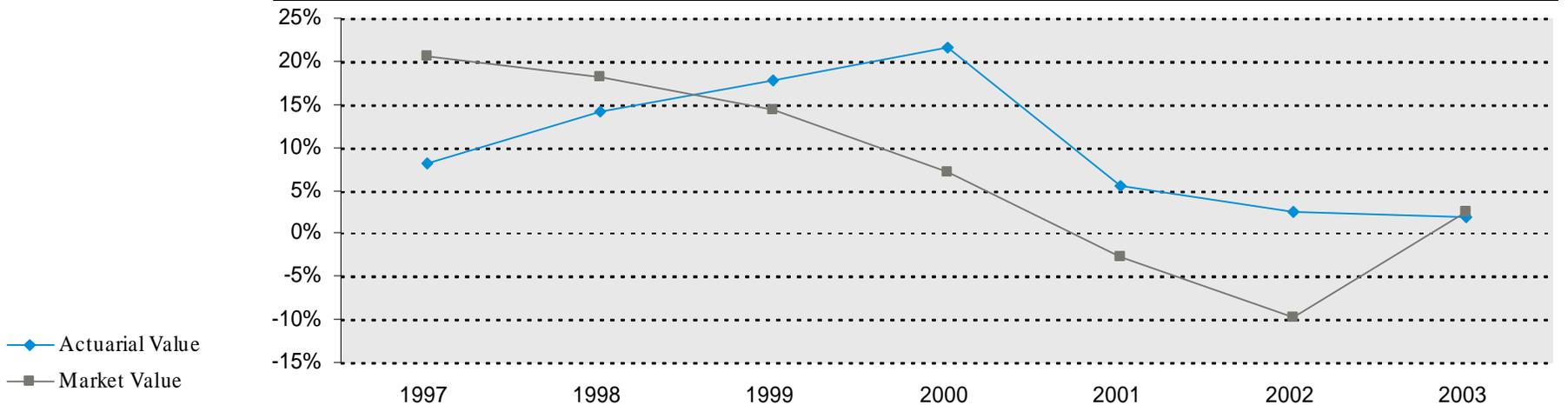


CHART 12D Hazardous Insurance
Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2003



SECTION 2: Valuation Results for the Kentucky Employees Retirement System

Administrative Expenses

Current assumptions include an assumption for the cost of administration for the retirement funds but not for the insurance funds. This assumption is modified with each valuation to estimate expenses for the upcoming fiscal year. The following summarizes the past year's experience and presents the assumptions for the next year.

Plan	Year End 2003 Assumption	Year End 2003 Actual Expense	Gain/Loss* for the Year	Year End 2004 Assumption
Non-Hazardous Retirement	\$5,213,214	\$4,834,196	\$410,287	\$5,000,000
Non-Hazardous Insurance	\$-0-	\$188,989	-\$204,581	\$-0-
Hazardous Retirement	\$419,454	\$393,893	\$26,670	\$400,000
Hazardous Insurance	\$-0-	\$16,799	-\$18,185	\$-0-

* Includes interest to year-end.

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- COLA’s granted in the year,
- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),

- the number of disability retirements, and
- salary increases different than assumed.

A brief summary of the demographic gain/(loss) experience of the Funds for the year ended June 30, 2003 is shown in the chart below

The chart shows elements of the experience gain/(loss) for the most recent year.

CHART 13 Experience Due to Changes in Demographics for Year Ended June 30, 2003	Non – Hazardous Retirement	Non – Hazardous Insurance	Hazardous Retirement	Hazardous Insurance
1. COLA	-\$92,406,781	N/A	-\$3,136,382	N/A
2. Other	-170,039,018	N/A	2,715,046	N/A
3. Total	<u>-\$262,445,799</u>	<u>\$12,186,714</u>	<u>-\$421,336</u>	<u>-\$9,909,855</u>
4. Percentage of Actuarial Accrued Liability	4.0%	0.6%	0.1%	3.5%

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded/(overfunded) actuarial accrued liability. This total amount is then divided by the projected salaries for active members to determine the funding rate.

The recommended contribution is based on a 30-year amortization of bases established each year as specified in the law governing the Plan.

Exhibit H provides details on these amortization bases.

The contribution rates as of June 30, 2003 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions

Charts 14 and 15 present the Recommended Contributions and reconciliations from the prior valuation.

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

The chart compares this valuation's recommended contribution with the prior valuation.

**CHART 14A Non-Hazardous Retirement
Recommended Contribution**

	As of June 30			
	2003		2002	
	Amount	% of Salary	Amount	% of Salary
1. Total normal cost	\$157,362,643	9.49%	\$153,894,963	9.63%
2. Administrative expenses	5,000,000	0.30%	5,213,214	0.33%
3. Expected employee contributions	<u>-82,402,448</u>	<u>-4.97%</u>	<u>-79,359,148</u>	<u>-4.97%</u>
4. Employer normal cost: (1) + (2) + (3)	\$79,960,195	4.82%	\$79,749,029	4.99%
5. Actuarial accrued liability	6,520,463,188		6,026,094,764	
6. Actuarial value of assets	<u>6,351,318,832</u>		<u>6,654,084,196</u>	
7. Unfunded/(overfunded) actuarial accrued liability: (5) - (6)	\$169,144,356		-\$627,989,432	
8. Payment on unfunded/(overfunded) actuarial accrued liability	4,798,737	0.29%	-34,170,196	-2.14%
9. Total recommended contribution: (4) + (8)	<u>\$84,758,932</u>	<u>5.11%</u>	<u>\$45,578,833</u>	<u>2.86%</u>
10. Projected salary	\$1,658,604,696		\$1,597,344,487	

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

The chart reconciles the contribution from the prior valuation to the amount determined in this valuation.

CHART 15A Non – Hazardous Retirement

Reconciliation of Recommended Contribution from June 30, 2002 to June 30, 2003

Recommended Contribution as of June 30, 2002	\$45,578,833
Effect of COLA for retirees	\$4,629,457
Effect of investment (gain)/loss	28,295,164
Effect of net other changes	<u>\$6,255,478</u>
Total change	<u>\$39,180,099</u>
Recommended Contribution as of June 30, 2003	\$84,758,932

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

**CHART 14B Non-hazardous Insurance
Recommended Contribution**

	As of June 30 2003	
	Amount	% of Salary
1. Employer normal cost	\$99,112,032	5.98%
2. Actuarial accrued liability	2,093,210,321	
3. Actuarial value of assets	<u>553,885,082</u>	
4. Unfunded/(overfunded) actuarial accrued liability: (2) - (3)	\$1,539,325,239	
5. Payment on unfunded/(overfunded) actuarial accrued liability	88,453,158	5.33%
6. Full EANC contribution: (1) + (5)	<u>\$187,565,190</u>	<u>11.31%</u>
7. Projected salary	\$1,658,604,696	
8. Prior year's funding rate	N/A	4.67%
9. Years to reach full EANC	N/A	13 years
10. Additional amount	N/A	0.51%
11. Total recommended contribution rate	N/A	5.18%

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

The chart compares this valuation's recommended contribution with the prior valuation.

**CHART 14C Hazardous Retirement
Recommended Contribution**

	As of June 30			
	2003		2002	
	Amount	% of Salary	Amount	% of Salary
1. Total normal cost	\$20,541,359	15.91%	\$21,324,718	17.01%
2. Administrative expenses	400,000	0.31%	419,454	0.33%
3. Expected employee contributions	<u>-9,736,239</u>	<u>-7.54%</u>	<u>-9,489,787</u>	<u>-7.57%</u>
4. Employer normal cost: (1) + (2) + (3)	\$11,205,120	8.68%	\$12,254,385	9.77%
5. Actuarial accrued liability	356,879,133		322,069,164	
6. Actuarial value of assets	<u>385,925,722</u>		<u>376,384,302</u>	
7. Unfunded/(overfunded) actuarial accrued liability: (5) - (6)	-\$29,046,589		-\$54,315,138	
8. Payment on unfunded/(overfunded) actuarial accrued liability	-1,830,431	-1.42%	-3,007,373	-2.40%
9. Total recommended contribution: (4) + (8)	<u>\$9,374,689</u>	<u>7.26%</u>	<u>\$9,247,012</u>	<u>7.37%</u>
10. Projected salary	\$129,088,956		\$125,371,604	

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

The chart reconciles the contribution from the prior valuation to the amount determined in this valuation.

CHART 15B Hazardous Retirement

Reconciliation of Recommended Contribution from June 30, 2002 to June 30, 2003

Recommended Contribution as of June 30, 2002	\$9,247,012
Effect of COLA for retirees	\$157,129
Effect of investment (gain)/loss	1,272,368
Effect of net other changes	<u>-1,301,820</u>
Total change	<u>\$127,677</u>
Recommended Contribution as of June 30, 2003	\$9,374,689

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

**CHART 14D Hazardous Insurance
Recommended Contribution**

	As of June 30 2003	
	Amount	% of Salary
1. Employer normal cost	\$19,864,464	15.39%
2. Actuarial accrued liability	283,178,335	
3. Actuarial value of assets	<u>151,459,500</u>	
4. Unfunded/(overfunded) actuarial accrued liability: (2) - (3)	\$131,718,835	
5. Payment on unfunded/(overfunded) actuarial accrued liability	7,422,833	5.75%
6. Full EANC contribution: (1) + (5)	<u>\$27,287,297</u>	<u>21.14%</u>
7. Projected salary	\$129,088,956	
8. Prior year's funding rate	N/A	11.47%
9. Years to reach full EANC	N/A	13 years
10. Additional amount	N/A	0.74%
11. Total recommended contribution rate	N/A	12.21%

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

**EXHIBIT A – Non-Hazardous
Table of Plan Coverage**

Category	Year Ended June 30		Change From Prior Year
	2003	2002	
Active members in valuation:			
Number	49,158	48,555	1.2%
Average age	42.2	41.5	N/A
Average service	10.0	1.0	N/A
Total salary	\$1,658,604,696	\$1,597,344,487	3.8%
Average salary	\$33,740	\$32,898	2.6%
Account balances	\$859,895,312	N/A	N/A
Total active vested members	32,229	30,883	4.4%
Vested terminated members	3,456	3,415	1.2%
Retired participants:			
Number in pay status	21,563	20,989	-2.7%
Average age	67.2	N/A	N/A
Average monthly benefit	\$1,328	N/A	N/A
Disabled members:			
Number in pay status	1,913	1,959	-2.3%
Average age	60.9	N/A	N/A
Average monthly benefit	\$811	N/A	N/A
Beneficiaries in pay status	3,757	3,755	0.1%
Inactive nonvested members due a refund	5,785	14,299	-59.5%

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

**EXHIBIT A – Hazardous
Table of Plan Coverage**

Category	Year Ended June 30		Change From Prior Year
	2003	2002	
Active members in valuation:			
Number	4,189	4,211	-0.5%
Average age	41.6	41.8	N/A
Average service	7.2	6.9	N/A
Total salary	\$129,088,956	\$125,371,604	3.0%
Average salary	\$30,816	\$29,772	3.5%
Account balances	\$71,414,721	0	N/A
Total active vested members	2,530	2,174	16.4%
Vested terminated members	145	127	14.2%
Retired participants:			
Number in pay status	1,085	961	12.9%
Average age	61.3	N/A	N/A
Average monthly benefit	\$870	N/A	N/A
Disabled members:			
Number in pay status	100	108	7.4%
Average age	55.6	N/A	N/A
Average monthly benefit	\$464	N/A	N/A
Beneficiaries in pay status	172	139	23.7%
Inactive nonvested members due a refund members	637	946	-32.7%

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT B – Non-Hazardous

**Members in Active Service as of June 30, 2003
By Age, Years of Service, and Average Salary**

Age	Years of Service									
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	4,468	4,345	123	--	--	--	--	--	--	--
	\$21,312	\$21,138	\$27,446	--	--	--	--	--	--	--
25 - 29	4,490	3,681	785	24	--	--	--	--	--	--
	25,989	25,578	27,794	\$29,996	--	--	--	--	--	--
30 - 34	5,496	3,003	1,760	690	43	--	--	--	--	--
	29,784	27,181	32,199	34,172	\$42,385	--	--	--	--	--
35 - 39	6,010	2,375	1,410	1,433	700	92	--	--	--	--
	32,835	27,286	34,255	36,662	39,671	\$42,677	--	--	--	--
40 - 44	6,904	2,203	1,332	1,234	1,064	849	222	--	--	--
	35,341	28,097	32,956	36,744	42,428	44,060	\$46,403	--	--	--
45 - 49	7,727	1,965	1,328	1,190	936	909	1,126	273	--	--
	37,676	28,615	32,997	36,801	39,756	44,464	48,676	\$54,356	--	--
50 - 54	6,795	1,545	1,055	1,080	884	690	797	638	106	--
	39,604	29,517	33,554	35,849	39,847	44,869	49,775	57,722	\$63,267	--
55 - 59	4,337	923	738	787	564	432	443	292	139	19
	39,004	29,162	33,822	34,689	39,803	42,912	47,490	59,386	66,257	\$73,978
60 - 64	2,087	402	346	398	358	207	201	106	35	34
	38,534	29,715	34,627	35,620	38,607	39,238	46,792	57,099	72,154	70,336
65 - 69	564	87	97	138	103	55	41	24	9	10
	38,824	31,120	32,972	35,041	38,414	42,550	50,915	62,905	55,769	75,955
70 & over	280	51	44	62	43	27	25	11	7	10
	35,608	22,216	31,681	32,238	32,335	47,178	37,915	47,103	62,714	87,511
Total	49,158	20,580	9,018	7,036	4,695	3,261	2,855	1,344	296	73
	\$33,740	\$26,184	\$32,692	\$35,958	\$40,211	\$43,847	\$48,427	\$57,356	\$65,481	\$74,406

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT B – Hazardous

**Members in Active Service as of June 30, 2003
By Age, Years of Service, and Average Salary**

Age	Years of Service								
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39
Under 25	417	414	3	--	--	--	--	--	--
	\$18,695	\$18,617	\$29,532	--	--	--	--	--	--
25 - 29	371	309	61	1	--	--	--	--	--
	23,925	23,360	26,668	\$31,248	--	--	--	--	--
30 - 34	515	298	182	35	--	--	--	--	--
	26,655	24,881	28,191	33,781	--	--	--	--	--
35 - 39	531	214	125	172	17	3	--	--	--
	29,573	25,715	30,458	33,368	\$31,794	\$37,740	--	--	--
40 - 44	573	211	110	178	56	18	--	--	--
	32,555	28,253	30,955	35,325	40,666	40,159	--	--	--
45 - 49	605	190	126	206	46	32	4	1	--
	35,104	29,168	33,246	36,848	47,221	47,065	\$48,441	\$44,604	--
50 - 54	589	196	98	215	43	25	7	5	--
	36,452	31,477	35,885	37,754	42,227	47,751	52,390	58,150	--
55 - 59	420	109	77	180	37	12	2	3	--
	37,139	32,454	31,987	39,726	41,926	50,932	56,040	57,600	--
60 - 64	137	30	27	67	7	3	1	--	2
	35,922	29,600	33,583	37,515	39,821	55,764	48,432	--	\$59,304
65 - 69	25	4	8	12	--	--	1	--	--
	34,709	27,867	31,940	36,935	--	--	57,516	--	--
70 & over	6	3	--	1	2	--	--	--	--
	39,296	33,116	--	48,480	43,974	--	--	--	--
Total	4,189	1,978	817	1,067	208	93	15	9	2
	\$30,816	\$25,355	\$31,076	\$36,649	\$41,941	\$46,391	\$51,902	\$56,461	\$59,304

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT C – Non-Hazardous Retirement

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended June 30, 2003	Year Ended June 30, 2002
Contribution income:		
Employer contributions	\$7,597,450	\$97,946
Member contributions	137,124,487	109,485,664
Less administrative expenses	<u>-4,834,196</u>	<u>-4,399,326</u>
Net contribution income	\$139,887,741	\$105,184,284
Investment income:		
Interest, dividends and other income	\$162,800,335	\$193,696,012
Adjustment toward market value	-173,618,496	-116,159,469
Less investment fees	<u>-16,375,927</u>	<u>-20,305,221</u>
Net investment income	<u>-27,194,088</u>	<u>57,231,322</u>
Total income available for benefits	\$112,693,653	\$162,415,606
Less benefit payments:		
Benefit payments	\$404,896,488	\$345,665,528
Refunds	<u>7,257,758</u>	<u>4,097,348</u>
Net benefit payments	\$412,154,246	\$349,762,876
Change in reserve for future benefits	-\$299,460,593	-\$187,347,270

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT C – Non-Hazardous Insurance

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended June 30, 2003	Year Ended June 30, 2002
Contribution income:		
Employer contributions	\$65,335,219	\$93,912,017
Less administrative expenses	<u>-188,989</u>	<u>-345,297</u>
Net contribution income	\$65,146,230	\$93,566,720
Investment income:		
Interest, dividends and other income	\$8,936,118	\$70,478,040
Adjustment toward market value	11,352,797	-47,320,151
Less investment fees	<u>-1,030,667</u>	<u>-1,245,451</u>
Net investment income	<u>19,258,247</u>	<u>21,912,438</u>
Total income available for benefits	\$84,404,477	\$115,479,158
Less benefit payments:	\$51,587,482	\$43,695,857
Change in reserve for future benefits	\$32,816,994	\$71,783,301

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT C – Hazardous Retirement

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended June 30, 2003	Year Ended June 30, 2002
Contribution income:		
Employer contributions	\$7,322,607	\$7,764,651
Member contributions	11,553,286	10,740,148
Less administrative expenses	<u>-393,893</u>	<u>-288,542</u>
Net contribution income	\$18,482,000	\$18,216,257
Investment income:		
Interest, dividends and other income	\$23,004,515	\$13,512,431
Adjustment toward market value	-5,219,001	-2,687,523
Less investment fees	<u>-11,977,062</u>	<u>-2,862,778</u>
Net investment income	<u>5,808,452</u>	<u>7,962,130</u>
Total income available for benefits	\$24,290,452	\$26,178,387
Less benefit payments:		
Benefit payments	\$13,372,965	\$10,202,893
Refunds	<u>1,159,808</u>	<u>1,074,889</u>
Net benefit payments	\$14,532,773	\$11,277,782
Change in reserve for future benefits	\$9,757,679	\$14,900,605

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT C – Hazardous Insurance

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended June 30, 2003	Year Ended June 30, 2002
Contribution income:		
Employer contributions	\$15,883,263	\$15,887,398
Less administrative expenses	<u>-16,799</u>	<u>-28,501</u>
Net contribution income	\$15,866,464	\$15,858,897
Investment income:		
Interest, dividends and other income	\$2,501,945	\$2,480,266
Adjustment toward market value	590,939	1,121,501
Less investment fees	<u>-385,477</u>	<u>-464,787</u>
Net investment income	<u>2,707,407</u>	<u>3,136,980</u>
Total income available for benefits	\$18,573,871	\$18,995,877
Less benefit payments:	\$2,936,708	\$2,449,250
Change in reserve for future benefits	\$15,637,163	\$16,546,627

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT D - Non-Hazardous Retirement

Table of Financial Information

	Year Ended June 30, 2003	Year Ended June 30, 2002
Cash equivalents	\$386,424	\$10,475,948
Accounts receivable:		
Investment accounts receivable	\$164,961	\$276,000
Year end interest receivable	27,079,407	32,305,000
Year end accounts receivable	<u>28,458,448</u>	<u>24,702,000</u>
Total accounts receivable	55,702,816	57,283,000
Investments:		
Bonds	\$1,772,036,808	\$1,695,472,000
Stocks	2,686,553,684	2,702,708,000
Mortgage	257,880,946	295,890,000
Real estate	6,641,045	9,057,000
Fixed assets	348,001	0
Short-term investments	<u>152,860,643</u>	<u>237,836,000</u>
Total investments at market value	<u>4,876,321,127</u>	<u>4,940,963,000</u>
Total assets	\$4,932,410,367	\$5,008,721,948
Less accounts payable:		
Total accounts payable	-\$2,967,182	-\$3,531,000
Net assets at market value	<u>\$4,929,443,185</u>	<u>\$5,005,190,948</u>
Net assets at actuarial value	<u>\$6,351,318,832</u>	<u>\$6,654,084,196</u>

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT D – Non-Hazardous Insurance

Table of Financial Information

	Year Ended June 30, 2003	Year Ended June 30, 2002
Cash equivalents	\$31,327	\$8,590,515
Accounts receivable:		
Investment accounts receivable	\$20,559	\$23,000
Year end interest receivable	1,180,298	1,129,000
Year end accounts receivable	<u>5,457,039</u>	<u>8,590,000</u>
Total accounts receivable	6,657,897	9,742,000
Investments:		
Bonds	\$48,016,250	\$43,160,000
Stocks	343,727,178	311,828,000
Short-term investments	<u>89,311,504</u>	<u>93,020,000</u>
Total investments at market value	<u>481,054,933</u>	<u>448,008,000</u>
Total assets	\$487,744,156	\$466,340,515
Less accounts payable:	-\$469,183	-\$676,000
Net assets at market value	<u>\$487,274,973</u>	<u>\$465,664,515</u>
Net assets at actuarial value	<u>\$553,885,082</u>	<u>\$521,250,455</u>

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT D – Hazardous Retirement

Table of Financial Information

	Year Ended June 30, 2003	Year Ended June 30, 2002
Cash equivalents	\$138,875	\$2,105,829
Accounts receivable:		
Investment accounts receivable	\$16,612	\$24,000
Year end interest receivable	1,641,693	1,993,000
Year end accounts receivable	<u>3,035,820</u>	<u>2,871,000</u>
Total accounts receivable	4,694,125	4,888,000
Investments:		
Bonds	\$104,852,057	\$99,477,000
Stocks	175,804,373	153,251,000
Mortgage	15,234,599	17,449,000
Real Estate	1,994,056	2,047,000
Fixed Assets	28,325	0
Short-term Investments	<u>18,056,968</u>	<u>22,909,000</u>
Total investments at market value	<u>315,970,378</u>	<u>295,133,000</u>
Total assets	\$320,803,378	\$302,126,829
Less accounts payable:	-\$278,687	-\$327,000
Net assets at market value	<u>\$320,524,691</u>	<u>\$301,799,829</u>
Net assets at actuarial value	<u>\$385,925,722</u>	<u>\$376,384,302</u>

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT D – Hazardous Insurance

Table of Financial Information

	Year Ended June 30, 2003	Year Ended June 30, 2002
Cash equivalents	\$25,058	\$1,633,410
Accounts receivable:		
Investment accounts receivable	\$6,430	\$9,000
Year end interest receivable	327,938	288,000
Year end accounts receivable	<u>1,334,207</u>	<u>1,381,000</u>
Total accounts receivable	1,668,575	1,678,000
Investments:		
Bonds	\$12,870,568	\$11,569,000
Short-term investments	<u>8,203,293</u>	<u>7,971,000</u>
Total investments at market value	<u>123,897,406</u>	<u>106,518,000</u>
Total assets	\$125,591,039	\$109,829,410
Less accounts payable:	-\$57,626	-\$60,000
Net assets at market value	<u>\$125,533,413</u>	<u>\$109,769,410</u>
Net assets at actuarial value	<u>\$151,459,500</u>	<u>\$135,874,582</u>

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

**EXHIBIT E – Non-Hazardous Retirement
Development of the Fund Through June 30, 2003**

Year Ended June 30	Employer Contributions	Member Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
1997	\$102,968,000	\$62,886,000	\$499,775,876	\$4,514,000	\$215,104,000	\$3,683,995,005
1998	112,188,000	67,595,000	734,397,620	5,037,000	237,066,000	4,356,072,625
1999	107,515,000	141,399,000	934,160,772	5,330,000	269,477,000	5,264,340,397
2000	115,055,000	107,824,000	1,662,814,063	5,764,000	337,594,000	6,806,675,460
2001	21,911,066	104,125,142	214,238,910	5,974,401	296,233,490	6,844,742,687
2002	97,946	109,485,664	57,231,322	7,710,547	349,762,876	6,654,084,196
2003	7,597,450	137,124,487	-27,194,088	8,138,967	412,154,246	6,351,318,832

* Net of investment fees

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT E – Non-Hazardous Insurance

Development of the Fund Through June 30, 2003

Year Ended June 30	Employer Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
1997	\$37,710,000	\$13,563,760	\$32,000	\$21,144,000	\$168,479,973
1998	39,504,000	25,548,211	32,000	23,395,000	210,105,184
1999	56,770,000	41,402,703	92,000	24,481,000	283,704,887
2000	76,926,000	69,464,365	171,000	30,364,000	399,560,252
2001	66,874,871	20,825,919	344,092	37,286,345	449,630,605
2002	93,912,017	21,912,438	508,748	43,695,857	521,250,455
2003	65,335,219	19,258,247	371,357	51,587,482	553,885,082

* *Net of investment fees*

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT E – Hazardous Retirement

Development of the Fund Through June 30, 2003

Year Ended June 30	Employer Contributions	Member Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
1997	\$15,151,000	\$6,189,000	\$18,849,790	\$287,000	\$10,498,000	\$166,717,238
1998	16,033,000	6,520,000	35,081,380	303,000	11,834,000	212,214,618
1999	19,444,000	8,323,000	36,932,701	349,000	16,726,000	259,839,319
2000	21,633,000	9,375,000	65,193,145	415,000	19,412,000	336,213,464
2001	10,377,708	10,545,410	14,170,043	411,956	9,217,194	361,677,475
2002	7,764,651	10,740,148	7,962,130	482,320	11,277,782	376,384,302
2003	7,322,607	11,553,286	5,808,452	610,152	14,532,773	385,925,722

* *Net of investment fees*

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT E – Hazardous Insurance

Development of the Fund Through June 30, 2003

Year Ended June 30	Employer Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
1997	\$6,279,000	\$3,015,382	\$8,000	\$866,000	\$42,684,374
1998	6,632,000	6,424,412	8,000	1,126,000	54,606,786
1999	10,774,000	10,495,863	13,000	1,284,000	74,579,649
2000	12,047,000	17,174,588	19,000	1,570,000	102,212,237
2001	13,226,298	5,949,835	33,246	1,982,382	119,372,742
2002	15,887,398	3,136,980	73,288	2,449,250	135,874,582
2003	15,883,263	2,707,407	69,044	2,936,708	151,459,500

* *Net of investment fees*

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT F – Non-Hazardous Retirement

Table of Amortization Bases

Date Established	Initial Years	Initial Amount	Annual Payment*	Years Remaining	Outstanding Balance
06/30/1990	30	\$256,534,456	\$24,108,559	17.00	\$324,745,497
06/30/1991	30	103,692,389	9,289,027	18.00	130,656,828
06/30/1992	30	-212,448,599	-18,141,457	19.00	-265,652,992
06/30/1993	30	-57,917,315	-4,714,303	20.00	-71,675,224
06/30/1994	30	59,519,052	4,617,966	21.00	72,720,577
06/30/1995	30	65,659,241	4,855,912	22.00	79,027,692
06/30/1996	30	-188,573,585	-13,293,248	23.00	-223,139,418
06/30/1997	30	-277,888,742	-18,656,579	24.00	-322,422,165
06/30/1998	30	-326,522,755	-20,877,834	25.00	-370,855,006
06/30/1999	30	-362,615,121	-22,081,519	26.00	-402,541,554
06/30/2000	30	-964,739,576	-55,950,476	27.00	-1,045,293,646
06/30/2001	30	584,703,884	32,295,380	28.00	617,538,494
06/30/2002	30	811,152,084	42,669,509	29.00	834,081,596
06/30/2003	30	811,953,677	<u>40,677,800</u>	30.00	<u>811,953,677</u>
Total			\$4,798,737		\$169,144,356

* Level percentage of salary

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT F – Non-Hazardous Insurance

Table of Amortization Bases

Date Established	Initial Years	Initial Amount	Annual Payment*	Years Remaining	Outstanding Balance
06/30/1996	30	\$988,745,810	\$69,700,344	23.00	\$1,169,984,467
06/30/1997	30	-31,222,593	-2,096,187	24.00	-36,226,209
06/30/1998	30	19,914,214	1,273,313	25.00	22,617,983
06/30/1999	30	-69,145,663	-4,210,639	26.00	-76,759,079
06/30/2000	30	44,198,913	2,563,335	27.00	47,889,446
06/30/2001	30	237,627,565	13,125,058	28.00	250,971,771
06/30/2002	30	36,483,146	1,919,144	29.00	37,514,446
06/30/2003	30	123,332,414	<u>6,178,790</u>	30.00	<u>123,332,414</u>
Total			\$88,453,158		\$1,539,325,239

* Level percentage of salary

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT F – Hazardous Retirement

Table of Amortization Bases

Date Established	Initial Years	Initial Amount	Annual Payment*	Years Remaining	Outstanding Balance
06/30/1990	30	-\$366,782	-\$34,469	17.00	-\$464,307
06/30/1991	30	8,515,857	762,872	18.00	10,730,343
06/30/1992	30	-2,222,347	-189,771	19.00	-2,778,898
06/30/1993	30	1,873,766	152,519	20.00	2,318,867
06/30/1994	30	2,736,468	212,317	21.00	3,343,426
06/30/1995	30	4,677,834	345,955	22.00	5,630,256
06/30/1996	30	-33,735,166	-2,378,117	23.00	-39,918,876
06/30/1997	30	-7,971,975	-535,213	24.00	-9,249,533
06/30/1998	30	-13,896,455	-888,538	25.00	-15,783,189
06/30/1999	30	-13,902,335	-846,585	26.00	-15,433,078
06/30/2000	30	-35,735,060	-2,072,470	27.00	-38,718,874
06/30/2001	30	18,907,681	1,044,342	28.00	19,969,460
06/30/2002	30	24,131,600	1,269,409	29.00	24,813,748
06/30/2003	30	26,494,066	<u>1,327,318</u>	30.00	<u>26,494,066</u>
Total			-\$1,830,431		-\$29,046,589

* Level percentage of salary

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT F – Hazardous Insurance

Table of Amortization Bases

Date Established	Initial Years	Initial Amount	Annual Payment*	Years Remaining	Outstanding Balance
06/30/1996	30	\$61,002,123	\$4,300,265	23.00	\$72,183,909
06/30/1997	30	15,100,456	1,013,797	24.00	17,520,400
06/30/1998	30	2,832,306	181,097	25.00	3,216,850
06/30/1999	30	-10,377,564	-631,944	26.00	-11,520,204
06/30/2000	30	-3,445,265	-199,810	27.00	-3,732,940
06/30/2001	30	20,464,709	1,130,342	28.00	21,613,926
06/30/2002	30	3,711,155	195,220	29.00	3,816,061
06/30/2003	30	28,620,833	<u>1,433,866</u>	30.00	<u>28,620,833</u>
Total			\$7,422,833		\$131,718,835

* Level percentage of salary

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT G

Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial

Assumptions:

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Normal Cost:

The amount of contributions required to fund the benefit allocated to the current year of service.

Actuarial Accrued Liability

For Actives:

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial Accrued Liability

For Pensioners:

The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Unfunded Actuarial Accrued

Liability:

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

Amortization of the Unfunded

Actuarial Accrued Liability: Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

Investment Return:

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

**EXHIBIT I – Non-Hazardous Retirement
Summary of Actuarial Valuation Results**

The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 3,757 beneficiaries in pay status)		27,233
2. Members inactive during year ended June 30, 2003 with vested rights		3,456
3. Members active during the year ended June 30, 2003		49,158
Fully vested	32,229	
Not vested	16,929	
4. Inactive nonvested members due a refund as of June 30, 2003		5,785

The actuarial factors as of the valuation date are as follows:

1. Normal cost, including administrative expenses		\$162,362,643
2. Present value of future benefits		8,335,898,846
3. Present value of future normal costs		1,815,435,658
4. Actuarial accrued liability		6,520,463,188
Retired participants and beneficiaries	\$3,784,438,563	
Inactive members with vested rights	40,606,646	
Active members	2,675,767,039	
Inactive nonvested members due a refund	19,650,940	
5. Actuarial value of assets (\$4,929,443,185 at market value as reported by Carpenter, Mountjoy & Bressler, PSC)		6,351,318,832
6. Unfunded actuarial accrued liability		-\$169,144,356

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

EXHIBIT I – Non-Hazardous Insurance
Summary of Actuarial Valuation Results

The actuarial factors as of the valuation date are as follows:

1. Normal cost		\$99,112,032
2. Present value of future benefits		3,280,459,560
3. Present value of future normal costs		1,187,249,239
4. Actuarial accrued liability		2,093,210,321
Retired participants and beneficiaries	\$1,027,275,896	
Inactive members with vested rights	62,330,226	
Active members	1,003,604,199	
5. Actuarial value of assets (\$487,274,973 at market value as reported by Carpenter, Mountjoy & Bressler, PSC)		553,885,082
6. Unfunded actuarial accrued liability		\$1,539,325,239

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

**EXHIBIT I – Hazardous Retirement
Summary of Actuarial Valuation Results**

The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 172 beneficiaries in pay status)		1,357
2. Members inactive during year ended June 30, 2003 with vested rights		145
3. Members active during the year ended June 30, 2003		4,189
Fully vested	2,530	
Not vested	1,659	
4. Inactive nonvested members due a refund as of June 30, 2003		637

The actuarial factors as of the valuation date are as follows:

1. Normal cost, including administrative expenses		\$20,941,359
2. Present value of future benefits		547,388,664
3. Present value of future normal costs		190,509,531
4. Actuarial accrued liability		356,879,133
Retired participants and beneficiaries	\$131,807,101	
Inactive members with vested rights	2,765,028	
Active members	221,256,800	
Inactive non-vested members	1,050,204	
5. Actuarial value of assets (\$320,524,691 at market value as reported by Carpenter, Mountjoy & Bressler, PSC)		385,925,722
6. Unfunded actuarial accrued liability		-\$29,046,589

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

EXHIBIT I – Hazardous Insurance
Summary of Actuarial Valuation Results

The actuarial factors as of the valuation date are as follows:

1. Normal cost		\$19,864,464
2. Present value of future benefits		482,578,911
3. Present value of future normal costs		199,400,576
4. Actuarial accrued liability		283,178,335
Retired participants and beneficiaries	\$109,326,730	
Inactive members with vested rights	4,652,721	
Active members	169,198,884	
5. Actuarial value of assets (\$125,533,413 at market value as reported by Carpenter, Mountjoy & Bressler, PSC)		151,459,500
6. Unfunded actuarial accrued liability		\$131,718,835

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

EXHIBIT II – Non-Hazardous Retirement

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/Overfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
06/30/1996	\$3,237,983,129	\$3,295,362,361	\$57,379,232	98.26%	\$1,232,974,460	4.65%
06/30/1997	3,683,995,005	3,463,047,650	-220,947,355	106.38	1,234,798,738	-17.89
06/30/1998	4,356,072,625	3,800,014,746	-556,057,879	114.63	1,321,004,266	-42.09
06/30/1999	5,264,340,397	4,327,622,821	-936,717,576	121.65	1,330,766,100	-70.39
06/30/2000	6,806,675,460	4,876,825,772	-1,929,849,688	139.57	1,409,504,668	-136.92
06/30/2001	6,844,742,687	5,444,035,294	-1,400,707,393	125.73	1,505,299,220	-93.05
06/30/2002	6,654,084,196	6,026,094,764	-627,989,432	110.42	1,595,809,458	-39.35
06/30/2003	6,351,318,832	6,520,463,188	169,144,356	97.41	1,658,604,696	10.20

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

EXHIBIT II – Non-Hazardous Insurance

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/Overfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
06/30/1996	\$138,382,213	\$1,127,128,023	\$988,745,810	12.28%	\$1,232,974,460	80.19%
06/30/1997	168,479,973	1,153,952,891	985,472,918	14.60	1,234,798,738	79.81
06/30/1998	210,105,184	1,242,183,993	1,032,078,809	16.91	1,321,004,266	78.13
06/30/1999	283,704,887	1,273,364,800	989,659,913	22.28	1,330,766,100	74.37
06/30/2000	399,560,252	1,457,475,358	1,057,915,106	27.41	1,409,504,668	75.06
06/30/2001	449,630,605	1,769,583,098	1,319,952,493	25.41	1,505,299,220	87.69
06/30/2002	521,250,455	1,907,683,881	1,386,433,426	27.32	1,595,809,458	86.88
06/30/2003	553,885,082	2,093,210,321	1,539,325,239	26.46	1,658,604,696	92.81

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

EXHIBIT II – Hazardous Retirement

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/Overfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
06/30/1996	\$137,312,448	\$120,042,122	-\$17,270,326	114.39%	\$85,933,543	-20.10%
06/30/1997	166,717,238	140,918,460	-25,798,778	118.31	87,757,075	-29.40
06/30/1998	212,214,618	171,735,076	-40,479,542	123.57	93,130,996	-43.47
06/30/1999	259,839,319	204,282,788	-55,556,531	127.20	103,464,123	-53.70
06/30/2000	336,213,464	243,365,557	-92,847,907	138.15	115,639,439	-80.29
06/30/2001	361,677,475	285,193,761	-76,483,714	126.82	122,857,992	-62.25
06/30/2002	376,384,302	322,069,164	-54,315,138	116.86	125,275,925	-43.36
06/30/2003	385,925,722	356,879,133	-29,046,589	108.14	129,088,956	-22.50

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

EXHIBIT II – Hazardous Insurance

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/Overfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
06/30/1996	\$34,263,992	\$95,266,115	\$61,002,123	35.97%	\$85,933,543	70.99%
06/30/1997	42,684,374	120,511,351	77,826,977	35.42	87,757,075	88.68
06/30/1998	54,606,786	137,394,162	82,787,376	39.74	93,130,996	88.89
06/30/1999	74,579,649	149,158,586	74,578,937	50.00	103,464,123	72.08
06/30/2000	102,212,237	175,167,613	72,955,376	58.35	115,639,439	63.09
06/30/2001	119,372,742	214,450,822	95,078,080	55.66	122,857,992	77.39
06/30/2002	135,874,582	236,819,050	100,944,468	57.37	125,275,925	80.58
06/30/2003	151,459,500	283,178,335	131,718,835	53.49	129,088,956	102.04

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

EXHIBIT III – Non - Hazardous

Supplementary Information Required by the GASB

Valuation date	June 30, 2003
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Level percent of salary
Remaining amortization period	17 to 30 years 5 year smoothing method

Actuarial assumptions:

Investment rate of return	8.25%
Payroll growth	5.00%

Plan membership:

Retired participants and beneficiaries receiving benefits	27,233
Terminated members entitled to, but not yet receiving benefits	3,456
Active members	<u>49,158</u>
Total	79,847

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

**EXHIBIT III – Non - Hazardous (continued)
Supplementary Information Required by the GASB**

Age	Contracts in Force – Retirees and Dependents					
	Total	100% Paid	75% Paid	50% Paid	25% Paid	0% Paid
Single; Pre-Medicare	6,602	5,471	249	212	111	559
Family; Pre-Medicare	542	522	8	6	5	1
Parent Plus, Pre-Medicare	428	361	7	5	2	53
Couple; Pre-Medicare	756	699	26	13	15	3
Medicare Regular	1,855	63	232	427	414	719
Medicare High Option	<u>11,311</u>	<u>6,203</u>	<u>1,584</u>	<u>1,160</u>	<u>550</u>	<u>1,814</u>
Total	21,494	13,319	2,106	1,823	1,097	3,149

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

**EXHIBIT III – Hazardous
Supplementary Information Required by the GASB**

Valuation date	June 30, 2003
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Level percent of salary
Remaining amortization period	17 to 30 years 5 year smoothing method

Actuarial assumptions:

Investment rate of return	8.25%
Payroll growth	5.00%

Plan membership:

Retired participants and beneficiaries receiving benefits	1,357
Terminated members entitled to, but not yet receiving benefits	145
Active members	<u>4,189</u>
Total	5,691

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

**EXHIBIT III – Hazardous (continued)
Supplementary Information Required by the GASB**

Age	Contracts in Force – Retirees and Dependents					
	Total	100% Paid	75% Paid	50% Paid	25% Paid	0% Paid
Single; Pre-Medicare	417	320	39	46	9	3
Family; Pre-Medicare	106	103	1	1	1	--
Parent Plus, Pre-Medicare	53	45	2	3	3	--
Couple; Pre-Medicare	128	109	7	8	4	--
Medicare Regular	62	7	8	27	20	--
Medicare High Option	<u>494</u>	<u>299</u>	<u>75</u>	<u>95</u>	<u>24</u>	<u>1</u>
Total	1,260	883	132	180	61	4

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

**EXHIBIT IV Non - Hazardous
Actuarial Assumptions and Actuarial Cost Method**

Mortality Rates:

Healthy: 1983 Group Annuity Mortality Table with margins.
Disabled: Pension Benefit Guaranty Corporation Table for Disabled Lives Receiving Social Security.

Age	Termination Rates before Retirement: Rate (%)			
	Mortality		Disability	Withdrawal*
	Male	Female		
20	0.04	0.02	0.03	2.40
25	0.05	0.03	0.03	2.40
30	0.06	0.03	0.04	2.40
35	0.09	0.05	0.06	2.40
40	0.12	0.07	0.10	2.00
45	0.22	0.10	0.21	1.80
50	0.39	0.16	0.42	1.60
55	0.61	0.25	0.79	1.20
60	0.92	0.42	1.39	0.20

*Withdrawal rates during the first five years of employment are 35%, 10%, 7%, 5%, and 4%.

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

Retirement Rates:	Age	Retirement Probability*
	55-57	0.04
	58-59	0.05
	60-61	0.06
	62	0.25
	63-64	0.10
	65	0.50
	66-67	0.20
	68	0.25
	69	0.40
	70 and older	1.00

*Retirement probability is 0.25 at first age member is eligible for unreduced retirement benefits.

Retirement Age for Inactive Vested Participants:	65
Percent Married:	100%
Age of Spouse:	Females 3 years younger than males.
Net Investment Return:	8.25%

Salary Increases:	Years of Service	Rate (%)
	1	12.00
	2	10.00
	3	8.00
	4 or more	6.50

Payroll Growth: 5.0%

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

Retiree Medical Insurance Election: Future retirees will select medical coverage in the same proportion that current retirees have selected coverage.

Monthly Contribution Rates:

**Pre-Medicare Coverage
Rate in Effect on Valuation Date**

Region 1	\$278.76
Region 2	292.00
Region 3	397.08
Region 4	269.44

<u>Carrier</u>	<u>Medicare Rate</u>		<u>Contracts in Force</u>	
	<u>Low Option</u>	<u>High Option</u>	<u>Low Option</u>	<u>High Option</u>
Anthem Blue Seniors	\$103.18	\$286.53	3,329	20,772
Anthem Blue Seniors Network	98.18	281.53	539	1,701
Bankers Life Medicare	82.70	195.35	732	410

**Weighted Medicare Coverage
Rate in Effect on Valuation Date**

	<u>Low Option</u>	<u>High Option</u>
All Members	\$99.34	\$284.52

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

Medical Contribution Rate Increases:	<u>Year</u>	<u>Rate(%)</u>
	2003-2005	10.00
	2006-2010	9.00
	2011-2015	8.00
	2016-2020	7.50
	2021 and thereafter	7.00

Members with Multiple Service Records: For active members with service in more than one system, the liability has been valued as follows:

- Service under all systems is aggregated for purposes of determining benefit eligibility.
- Future service is projected only under the system in which the member is currently active.
- The actual benefit under each system is determined based only on service (past and projected future service, if applicable) under that system.
- The liability is determined under each system based on the actuarial assumptions used for the system in which the member is currently active. This liability is then included in the valuation of the system in which the service has been earned (or is projected to be earned).

For inactive members with service in more than one system, the benefit attributable to the service under each system is determined, and the liability for that benefit is then included in the valuation of the system in which the service was earned.

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

Administrative Expenses: \$5,000,000

Actuarial Value of Assets: Sum of expected valuation assets and amortizations of the investment gains/(losses) from the current and four prior years. Expected valuation assets is equal to the actuarial value at the beginning of the year plus the expected return on assets using the assumed valuation interest rate from the prior year plus actual cash flows from the prior year. The current year investment gain/(loss) is determined as the difference between actual market value and expected actuarial value less any unamortized portions of the gain/(loss) from the previous four years.

Actuarial Cost Method: Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by service, with Normal Cost determined as if the current benefit accrual rate had always been in effect.

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

**EXHIBIT IV Hazardous
Actuarial Assumptions and Actuarial Cost Method**

Mortality Rates:

Healthy: 1983 Group Annuity Mortality Table with margins plus 0.05% per year.
Disabled: Pension Benefit Guaranty Corporation Table for Disabled Lives Receiving Social Security plus 0.05% per year.

Age	Termination Rates before Retirement:				Rate (%)		
	Mortality		Disability	Withdrawal*			
	Male	Female					
20	0.09	0.07	0.04	3.04			
25	0.10	0.08	0.04	3.04			
30	0.11	0.08	0.05	3.38			
35	0.14	0.10	0.07	2.44			
40	0.17	0.12	0.13	1.50			
45	0.27	0.15	0.26	0.75			
50	0.44	0.21	0.53	0.00			
55	0.66	0.30	0.99	0.00			
60	0.97	0.47	1.74	0.00			

* Withdrawal rates during the first five years of employment are 30%, 8%, 4%, 4%, and 4%.

Retirement Rates: 50% will retire as soon as eligible for unreduced benefit and balance will continue until age 60.

Retirement Age for Inactive Vested Participants: 55

Percent Married: 100%

Age of Spouse: Females 3 years younger than males.

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

Dependent Children: For duty related death benefits, it is assumed that the employee is survived by two dependent children each age 6.

Net Investment Return: 8.25%

Salary Increases:	Years of Service	Rate (%)
	1	12.00
2	10.00	
3	8.00	
4 or more	6.50	

Payroll Growth: 5.0%

Retiree Medical Insurance Election: Future retirees will select medical coverage in the same proportion that current retirees have selected coverage.

Monthly Contribution Rates:	Pre-Medicare Coverage Rate in Effect on Valuation Date			
	Single	Family	Parent Plus	Couple
Region 1	\$278.76	\$627.24	\$376.32	\$564.52
Region 2	292.00	657.04	394.24	591.32
Region 3	397.08	893.56	536.12	804.20
Region 4	269.44	606.40	363.84	545.76

Carrier	Medicare Rate		Contracts in Force	
	Low Option	High Option	Low Option	High Option
Anthem Blue Seniors	\$103.18	\$286.53	3,329	20,772
Anthem Blue Seniors Network	98.18	281.53	539	1,701
Bankers Life Medicare	82.70	195.35	732	410

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

Weighted Medicare Coverage Rate in Effect on Valuation Date		
	<u>Low Option</u>	<u>High Option</u>
All Members	\$99.34	\$284.52

Medical Contribution Rate Increases:	<u>Year</u>	<u>Rate(%)</u>
	2003-2005	10.00
	2006-2010	9.00
	2011-2015	8.00
	2016-2020	7.50
	2021 and thereafter	7.00

Members with Multiple Service Records: For active members with service in more than one system, the liability has been valued as follows:

- Service under all systems is aggregated for purposes of determining benefit eligibility.
- Future service is projected only under the system in which the member is currently active.
- The actual benefit under each system is determined based only on service (past and projected future service, if applicable) under that system.
- The liability is determined under each system based on the actuarial assumptions used for the system in which the member is currently active. This liability is then included in the valuation of the system in which the service has been earned (or is projected to be earned).

For inactive members with service in more than one system, the benefit attributable to the service under each system is determined, and the liability for that benefit is then included in the valuation of the system in which the service was earned.

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

Administrative Expenses: \$400,000

Actuarial Value of Assets: Sum of expected valuation assets and amortization of the investment gains/(losses) from the current and four prior years. Expected valuation assets is equal to the actuarial value at the beginning of the year plus the expected return on assets using the assumed valuation interest rate from the prior year plus actual cash flows from the prior year. The current year investment gain/(loss) is determined as the difference between actual market value and expected actuarial value less any unamortized portions of the gain/(loss) from the previous four years.

Actuarial Cost Method: Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by service, with Normal Cost determined as if the current benefit accrual rate had always been in effect.

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

**EXHIBIT V Non – Hazardous
Summary of Plan Provisions**

This exhibit summarizes the major provisions of the System included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year: June 30 through June 30

Normal Retirement:

Age Requirement 65

Service Requirement None

Amount If a member has at least 48 months of service, the monthly benefit is 1.97% times final average compensation times years of service. For members who were participants in any one of the state retirement systems from January 1, 1998 through January 1, 1999, the benefit factors is 2.00%. For these members who retire between January 1, 1999 and January 31, 2009 with at least 240 months service, the benefit factor is 2.20%.

Final compensation is the average salary during the five highest paid fiscal years. If the months of service credit during the highest five-year period is less than forty-eight, one or more additional fiscal years shall be used. For a non-hazardous member whose effective retirement date is between August 1, 2001 and January 1, 2009, and whose total service credit is at least 27 years and whose age and years of service total at least 75, final compensation is based on three years rather than five years. If the months of service credit during the highest three-year period is less than twenty-four, one or more additional fiscal years shall be used.

If a member has less than 48 months service, the monthly benefit is the actuarial equivalent of two times the member’s contributions with interest.

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

Early Retirement:

<i>Requirement</i>	Age 55 with 60 months service or any age with 25 years service
<i>Amount</i>	Normal retirement benefit reduced by 5% per year for the first five years and 4% per year for the next five years for each year the member is younger than age 65 or has less than 27 years service, whichever is smaller.

Disability:

<i>Age Requirement</i>	None
<i>Service Requirement</i>	60 months
<i>Amount</i>	<p>Normal retirement benefit except that service credit will be added to total service for the period from the last day of paid employment to the member's 65th birthday or until the combined total service as of the last day of paid employment and added service equals 25 years. The total amount of service credit added shall not exceed the member's actual service credit on the last day of paid employment. For members with at least 25 years of service but less than 27 years service, total service shall be 27 years. For employees with 27 or more years of service credit, actual service will be used.</p> <p>A contributing member in a non-hazardous position who is disabled in the line of duty is entitled to a retirement benefit of not less than 25% of the member's final monthly rate of pay plus 10% of the member's final monthly rate of pay for each dependent child. The maximum dependent child's benefit is 40% of the member's final monthly rate of pay.</p>

Vesting:

<i>Age Requirement</i>	None
<i>Service Requirement</i>	60 months
<i>Amount</i>	Normal retirement benefit deferred to normal retirement age or reduced benefit payable at early retirement age.
<i>Normal Retirement Age</i>	65

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

Pre-Retirement Death Benefit (not in line of duty):

<i>Requirement</i>	Any age with 60 months service or age 65 with 48 months service.
<i>Amount</i>	Benefit equal to the benefit the member would have received had the member retired on the day before the date of death and elected a 100% joint and survivor form. Benefit is actuarially reduced if member is less than age 55 at date of death.

Spouse's Pre-Retirement Death Benefit (in line of duty):

<i>Requirement</i>	None
<i>Amount</i>	The spouse may choose (1) a \$10,000 lump sum payment and monthly payments of 25% of the member's final monthly rate of pay or (2) benefits based on the member's age, years of service and final compensation at date of death.

Dependent Child's Death Benefit (in line of duty):

<i>Requirement</i>	None
<i>Amount</i>	10% of member's final monthly rate of pay up to a maximum of 40%.

Post-Retirement Death Benefit:

<i>Lump - sum Benefit</i>	\$5,000
<i>Husband and Wife</i>	The choice of payment option selected by the member will determine the monthly benefits provided to the beneficiary upon the member's death.

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

**EXHIBIT V Hazardous
Summary of Plan Provisions**

This exhibit summarizes the major provisions of the System included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year: June 30 through June 30

Normal Retirement:

<i>Age Requirement</i>	55
<i>Service Requirement</i>	None
<i>Amount</i>	If a member has at least 60 months of service, the monthly benefit is 2.49% times final average compensation times years of service. Final compensation is the average salary during the three highest paid fiscal years. If the months of service credit during the highest three-year period is less than twenty-four, one or more additional fiscal years shall be used. If a member has less than 60 months service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest.

Early Retirement:

<i>Requirement</i>	Age 50 with 15 years service or any age with 20 years service
<i>Amount</i>	Normal retirement benefit reduced by 5.5% per year for each year the member is younger than age 55 or has less than 20 years service, whichever is smaller.

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

Disability:

<i>Age Requirement</i>	None
<i>Service Requirement</i>	60 months
<i>Amount</i>	Normal retirement benefit except that service credit will be added to total service for the period from the last day of plan employment to the member's 55 th birthday or until the combined total service as of the last day of paid employment and added service equals 20 years. The total amount of service credit added shall not exceed the member's actual service credit on the last day of paid employment. For employees with 20 or more years of service credit, actual service credit will be used. A member in a hazardous position who is disabled in the line of duty is entitled to a retirement benefit of not less than 25% of the member's final monthly rate of pay plus 10% of the member's final monthly rate of pay for each dependent child. The maximum dependent child's benefit is 40% of the member's final monthly rate of pay.

Vesting:

<i>Age Requirement</i>	None
<i>Service Requirement</i>	60 months
<i>Amount</i>	Normal retirement benefit deferred to normal retirement age or reduced benefit payable at early retirement age.
<i>Normal Retirement Age</i>	55

Pre-Retirement Death Benefit (not in line of duty):

<i>Requirement</i>	Any age with 60 months service or age 65 with 48 months service.
<i>Amount</i>	Benefit equal to benefit member would have received had the member retired on the day before the date of death and elected a 100% joint and survivor form. Benefit is actuarially reduced if member is less than age 55 at date of death.

Spouse's Pre-Retirement Death Benefit (in line of duty):

<i>Requirement</i>	None
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SECTION 4: Reporting Information for the Kentucky Employees Retirement System

Amount The spouse may choose (1) a \$10,000 lump sum payment and monthly payments of 25% of the member's final monthly rate of pay or (2) benefits based on the members' age, years of service and final compensation at date of death.

Dependent Non – Spouse's Death Benefit (in line of duty):

Requirement None

Amount The non-spouse may choose (1) a \$10,000 lump sum payment or (2) benefits based upon the member's age, years of service and final compensation at date of death.

Dependent Child's Death Benefit (in line of duty):

Requirement None

Amount 10% of member's final monthly rate of pay up to a maximum of 40%.

Post-Retirement Death Benefit:

Lump - sum Benefit \$5,000

Husband and Wife The choice of payment option selected by the member will determine the monthly benefits provided to the beneficiary upon the member's death.

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County Employees Retirement System

*Actuarial Valuation and Review
as of June 30, 2003*

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November 6, 2003

*Board of Trustees
County Employees Retirement System
Perimeter Park West
1260 Louisville Road
Frankfort, Kentucky 40601-6124*

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2003. It summarizes the actuarial data used in the valuation, establishes the funding requirements for the fiscal year beginning July 1, 2004 and analyzes the preceding year's experience.

The census information on which our calculations were based was prepared by the System and the financial information was provided by the Auditor. That assistance is gratefully acknowledged.

This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

THE SEGAL COMPANY

By:

*Leon F. (Rocky) Joyner, Jr., ASA, MAAA
Vice President and Actuary*

*K. Eric Fredén, FSA, MAAA
Associate Actuary*

SECTION 1

VALUATION SUMMARY

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SECTION 2

VALUATION RESULTS

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SECTION 1: Valuation Summary for the County Employees Retirement System

Purpose

This report has been prepared by The Segal Company to present a valuation of the County Employees Retirement System as of June 30, 2003. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Board;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2003, provided by the Board;
- The assets of the Plan as of June 30, 2003, provided by the Auditor;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

- The County Employees Retirement System's basic financial goal is to establish contributions which fully fund the system's liabilities, and which, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.
- The retirement contribution rate is determined using the Entry Age Normal Cost (EANC) Method. Under this method the employer contribution required is the sum of the normal cost, administration expenses and the sum of the 30-year amortization payments established each valuation due to changes in the Unfunded Actuarial Accrued Liability.
- The medical insurance contribution rate is determined in a similar method except that the actual contribution rate is determined by increasing the prior year's rate by an amount necessary to raise the insurance rate to the full EANC amount by the year 2016.
- The rates calculated in this report may be adopted by the Board for July 1, 2004 through June 30, 2005.

SECTION 1: Valuation Summary for the County Employees Retirement System

- > The following summarizes the required contributions for the year beginning July 1, 2004 and compares them to the prior valuation amounts.

Non-Hazardous

<u>Plan</u>	<u>July 1, 2004</u>	<u>July 1, 2003</u>
	<u>Rate</u>	<u>Rate</u>
Retirement	2.82%	2.39%
Insurance	<u>5.66</u>	<u>4.95</u>
Total	8.48%	7.34%

Hazardous

<u>Plan</u>	<u>July 1, 2004</u>	<u>July 1, 2003</u>
	<u>Rate</u>	<u>Rate</u>
Retirement	9.31%	6.76%
Insurance	<u>12.77</u>	<u>11.75</u>
Total	22.08%	18.51%

- > The increase in the total rate is due to:

Non-Hazardous

Investment loss	1.22%
Retiree COLA	0.16
Insurance Phase-in	0.71
Other experience	<u>-0.95</u>
Total change	1.14%

Hazardous

Investment loss	1.57%
Retiree COLA	0.29
Insurance Phase-in	1.02
Other experience	<u>0.69</u>
Total change	3.57%

SECTION 1: Valuation Summary for the County Employees Retirement System

- The actuarial valuation report as of June 30, 2003 is based on financial information as of that date. Changes in the value of assets subsequent to that date, to the extent that they exist, are not reflected. Declines in asset values will increase the actuarial cost of the Plan, while increases will decrease the actuarial cost of the Plan. Because the actuarial value of assets involves a smoothing method, changes in market value are not fully reflected immediately in the actuarial value of assets. Rather, that effect is spread over a period of years.
- As indicated in Section 2, Subsection B of this report, the total unrecognized investment losses as of June 30, 2003 are:

Non-Hazardous

<u>Plan</u>	<u>Unrecognized investment losses as of 6/30/2003</u>
Retirement	\$1,111,698,930
Insurance	84,392,980

Hazardous

<u>Plan</u>	<u>Unrecognized investment losses as of 6/30/2003</u>
Retirement	\$298,210,384
Insurance	45,977,741

These investment losses will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent they are not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 8.25% per year (net of expenses) on a market value basis will result in investment losses on the actuarial value of assets in the next few years. Therefore, if the actual market return is equal to the assumed 8.25% rate and all other actuarial assumption are met, the contribution requirements would still increase in each of the next few years.

SECTION 1: Valuation Summary for the County Employees Retirement System

Summary of Key Valuation Results – Non-Hazardous

	Valuation Date	
	June 30, 2003	June 30, 2002
Contributions for next fiscal year:		
Retirement	2.82%	2.39%
Insurance	<u>5.66</u>	<u>4.95</u>
Total	8.48%	7.34%
Funded status as of valuation date:		
Retirement		
Actuarial Accrued Liability	\$4,417,597,802	\$4,165,355,149
Actuarial Value of Assets	5,286,580,047	5,397,787,158
Funded Ratio on Actuarial Value of Assets	119.67%	129.59%
Market Value of Assets	\$4,174,881,117	\$4,126,756,301
Funded Ratio on Market Value of Assets	94.51%	99.07%
Insurance		
Actuarial Accrued Liability	\$2,176,963,259	\$1,977,577,038
Actuarial Value of Assets	520,060,105	450,497,307
Funded Ratio on Actuarial Value of Assets	23.89%	22.78%
Market Value of Assets	\$435,667,125	\$365,332,585
Funded Ratio on Market Value of Assets	20.01%	18.47%
Demographic data as of valuation date:		
Number of retired participants and beneficiaries	27,092	26,147
Number of vested former members	4,692	4,470
Number of former members due a refund	27,634	26,508
Number of active members	82,288	79,850
Total salary	\$1,796,451,180	\$1,688,460,789
Average salary	21,831	21,145

SECTION 1: Valuation Summary for the County Employees Retirement System

Summary of Key Valuation Results – Hazardous

	Valuation Date	
	June 30, 2003	June 30, 2002
Contributions for next fiscal year:		
Retirement	9.31%	6.76%
Insurance	<u>12.77</u>	<u>11.75</u>
Total	22.08%	18.51%
Funded status as of valuation date:		
Retirement		
Actuarial Accrued Liability	\$1,499,628,782	\$1,327,291,273
Actuarial Value of Assets	1,467,004,856	1,485,511,793
Funded Ratio on Actuarial Value of Assets	97.82%	111.92%
Market Value of Assets	\$1,168,794,472	\$1,144,349,093
Funded Ratio on Market Value of Assets	77.94%	86.22%
Insurance		
Actuarial Accrued Liability	\$935,650,662	\$781,184,974
Actuarial Value of Assets	269,190,080	234,683,878
Funded Ratio on Actuarial Value of Assets	28.77%	30.04%
Market Value of Assets	223,212,339	187,533,847
Funded Ratio on Market Value of Assets	23.86%	24.01%
Demographic data as of valuation date:		
Number of retired participants and beneficiaries	3,737	3,483
Number of vested former members	165	148
Number of former members due a refund	616	552
Number of active member	9,286	8,949
Total salary	\$374,700,732	\$346,319,146
Average salary	40,351	38,699

SECTION 2: Valuation Results for the County Employees Retirement System

A. MEMBER DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, vested terminated members, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these member groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B, and C.

Active Members

Plan costs are affected by the age, years of service and salaries of active members. In this year's non-hazardous valuation, there were 82,288 active members with an average age of 43.8, average years of service of 7.6 years and average salaries of \$21,831. The 79,850 active members in the prior valuation had an average age of 43.0, average service of 7.6 years and average salaries of \$21,145.

In the hazardous plan there were 9,286 active members with an average age of 37.3, average years of service of 7.8 years and average salaries of \$40,351. The 8,949 active members in the prior valuation had an average age of 36.3, average service of 7.8 years and average salaries of \$38,699.

Inactive Members

There were 4,692 non-hazardous members with a vested right to a deferred or immediate vested benefit.

In addition, there were 27,634 members entitled to a return of their employee contributions.

For the hazardous plan there were 165 members with a vested right to a deferred or immediate vested benefit.

In addition, there were 616 members entitled to a return of their employee contributions.

Retired Participants and Beneficiaries

As of June 30, 2003, 24,121 non-hazardous retired participants and 2,971 beneficiaries were receiving total monthly benefits of \$18,320,686. For comparison, in the previous valuation, there were 23,296 retired participants and 2,851 beneficiaries receiving monthly benefits of \$16,529,087.

For the hazardous plan there were 3,235 retired participants and 502 beneficiaries receiving total monthly benefits of \$6,026,847. For comparison, in the previous valuation, there were 3,246 retired participants and 237 beneficiaries receiving monthly benefits of \$5,466,256.

SECTION 2: Valuation Results for the County Employees Retirement System

A historical perspective of how the member population has changed over the past eight valuations can be seen in this chart.

CHART 1A Non-Hazardous

Member Population: 1996 – 2003

Year Ended June 30	Active Members	Vested Terminated Members*	Retired Participants and Beneficiaries	Ratio of Non-Actives to Actives
1996	66,273	2,254	16,208	0.28
1997	69,219	2,503	17,797	0.29
1998	71,426	2,839	18,976	0.31
1999	74,151	3,238	20,687	0.32
2000	77,419	3,500	22,708	0.34
2001	78,773	4,080	24,415	0.36
2002	79,850	4,470	26,147	0.38
2003	82,288	4,692	27,092	0.39

CHART 1B Hazardous

Member Population: 1996 – 2003

Year Ended June 30	Active Members	Vested Terminated Members*	Retired Participants and Beneficiaries	Ratio of Non-Actives to Actives
1996	6,281	85	1,961	0.33
1997	6,513	100	2,217	0.36
1998	6,800	117	2,392	0.37
1999	7,488	128	2,704	0.38
2000	7,951	112	2,984	0.39
2001	8,586	148	3,221	0.39
2002	8,949	148	3,483	0.41
2003	9,286	165	3,737	0.42

**Excludes terminated members due a refund of employee contributions*

SECTION 2: Valuation Results for the County Employees Retirement System

These graphs show a distribution of active members by age and by years of service.

CHART 2A Non - Hazardous
Distribution of Active Members by Age as of June 30, 2003

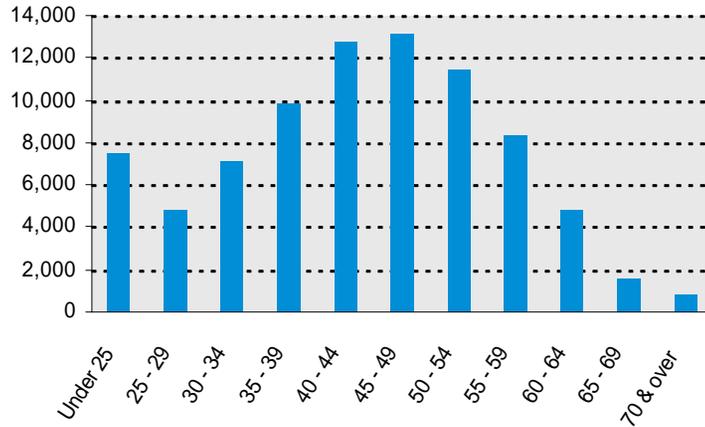
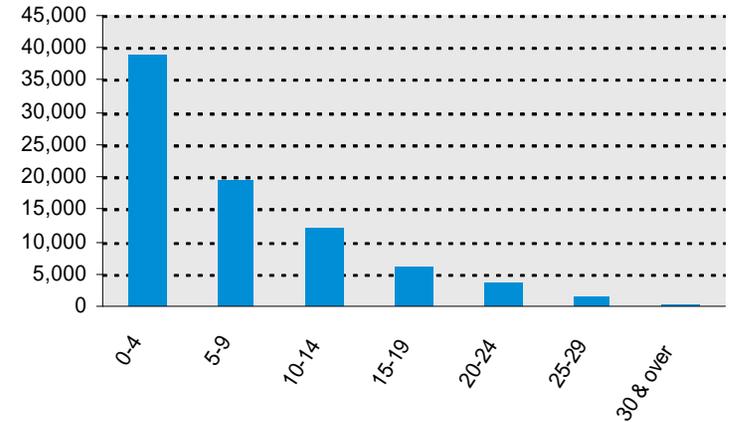


CHART 3A Non - Hazardous
Distribution of Active Members by Years of Service as of June 30, 2003



These graphs show a distribution of the current retired participants based on their monthly amount and age, by type of pension.

CHART 4A Non - Hazardous
Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2003

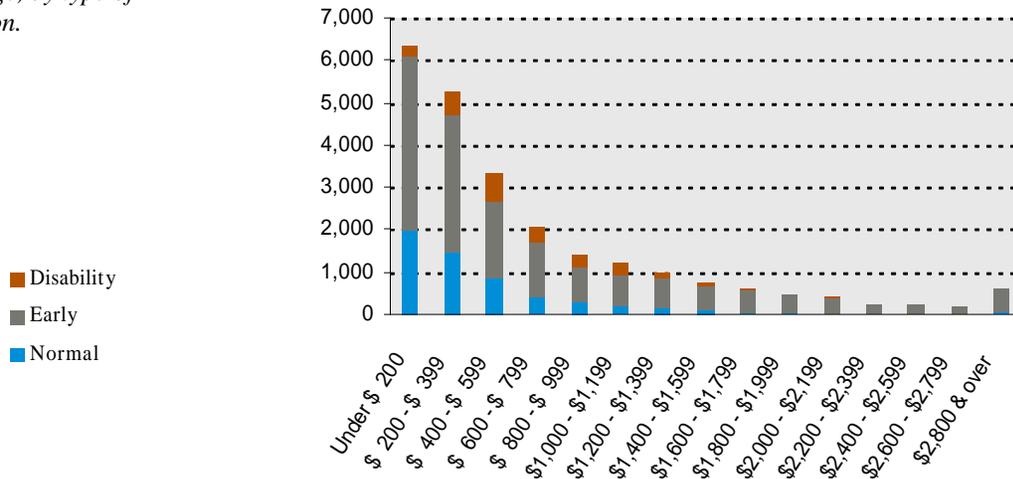
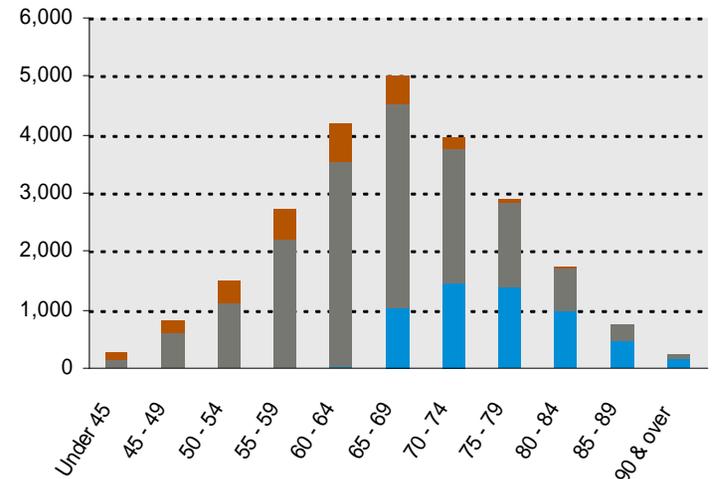


CHART 5A Non - Hazardous
Distribution of Retired Participants by Type and by Age as of June 30, 2003



SECTION 2: Valuation Results for the County Employees Retirement System

These graphs show a distribution of active members by age and by years of service

CHART 2B Hazardous
Distribution of Active Members by Age as of June 30, 2003

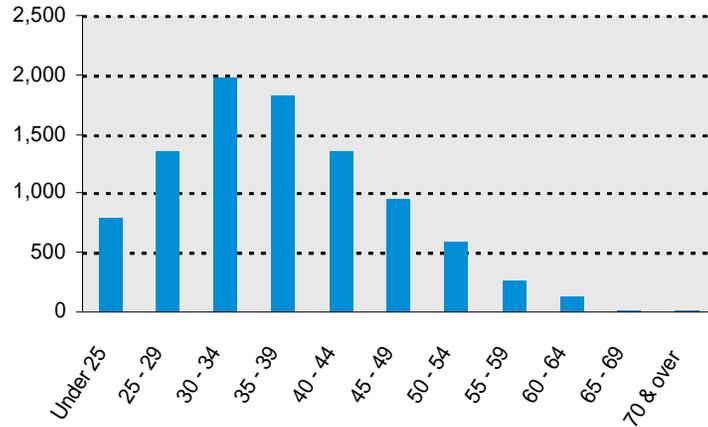
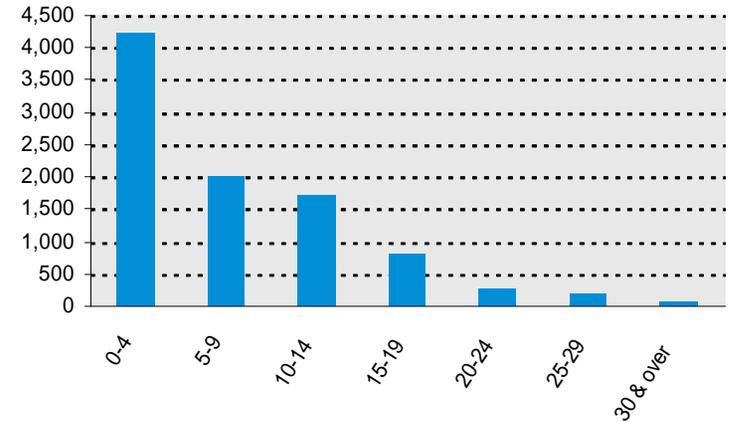


CHART 3B Hazardous
Distribution of Active Members by Years of Service as of June 30, 2003



These graphs show a distribution of the current retired participants based on their monthly amount and age, by type of pension.

CHART 4B Hazardous
Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2003

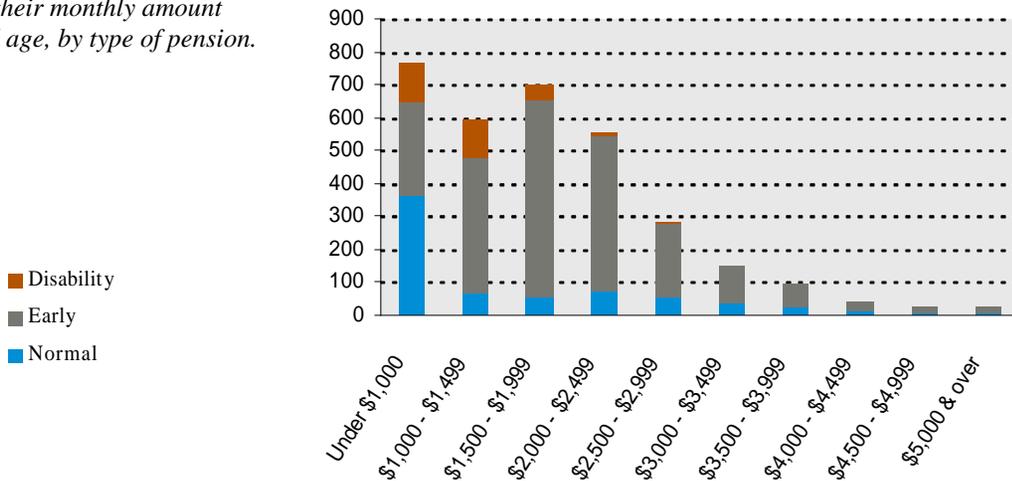
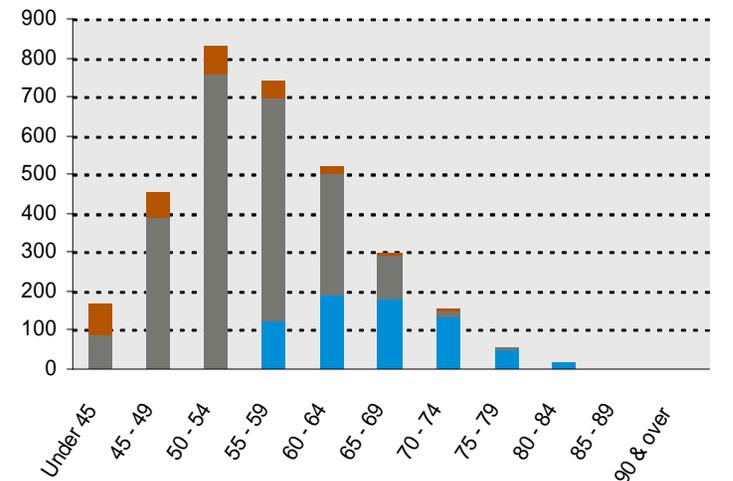


CHART 5B Hazardous
Distribution of Retired Participants by Type and by Age as of June 30, 2003



SECTION 2: Valuation Results for the County Employees Retirement System

B. FINANCIAL INFORMATION

Retirement plan funding anticipates that, over the long term, both net contributions (less administrative expenses) and net investment earnings (less investment fees) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits D, E and F.

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

SECTION 2: Valuation Results for the County Employees Retirement System

The charts depict the components of changes in the actuarial value of assets over the last seven years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

CHART 6A Non - Hazardous Retirement

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 – 2003

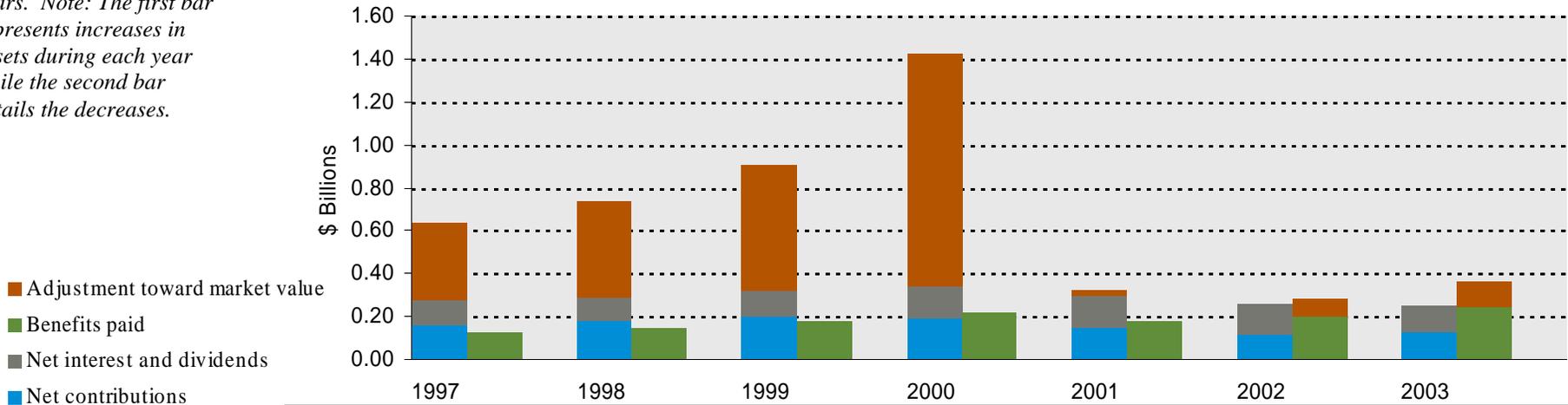
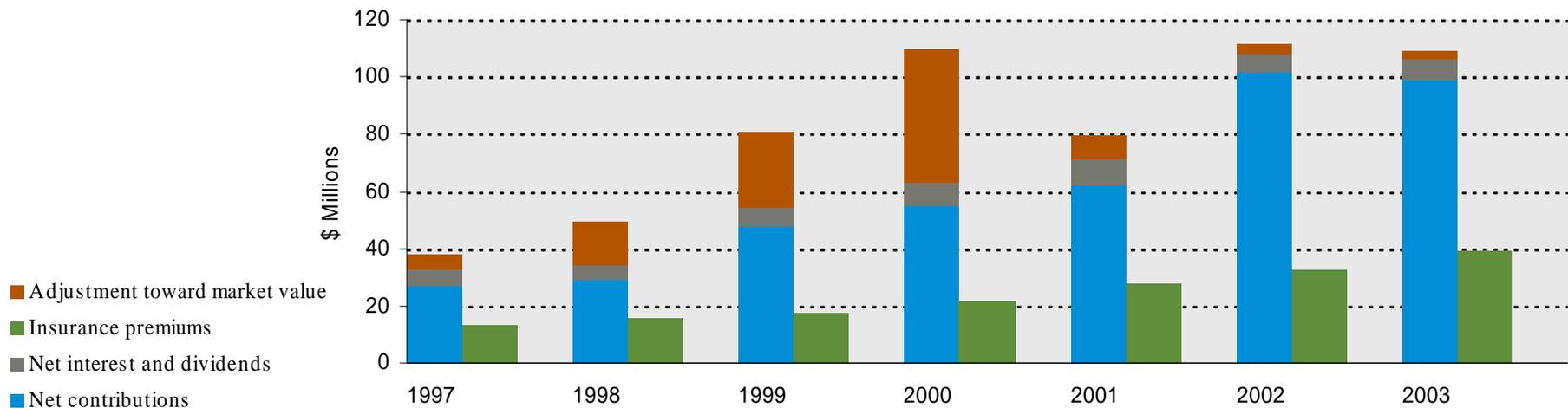


CHART 6B Non - Hazardous Insurance

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 – 2003



SECTION 2: Valuation Results for the County Employees Retirement System

The charts depict the components of changes in the actuarial value of assets over the last seven years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

CHART 6C Hazardous Retirement

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 - 2003

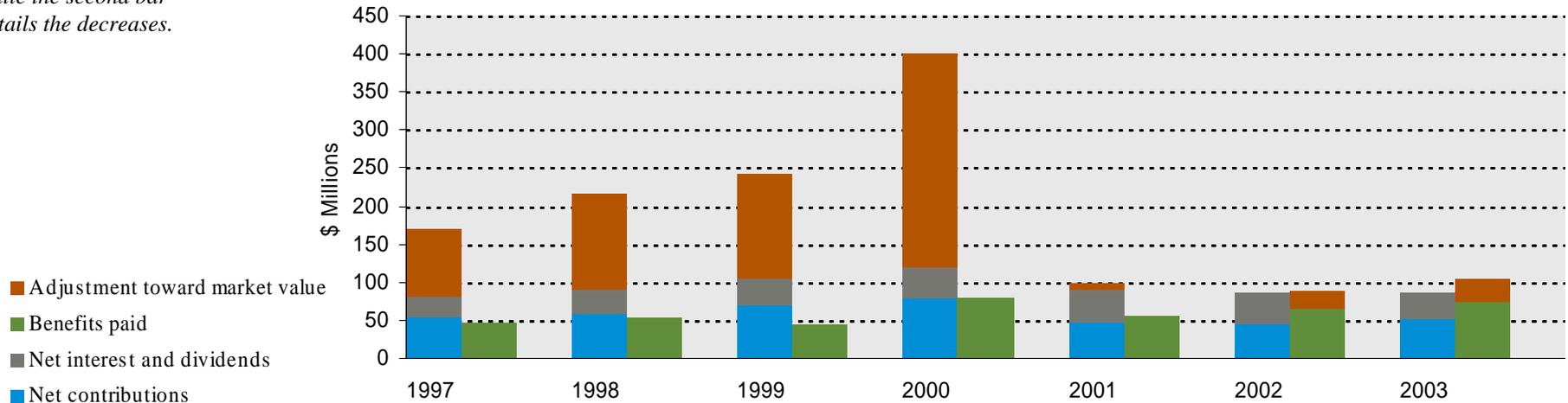
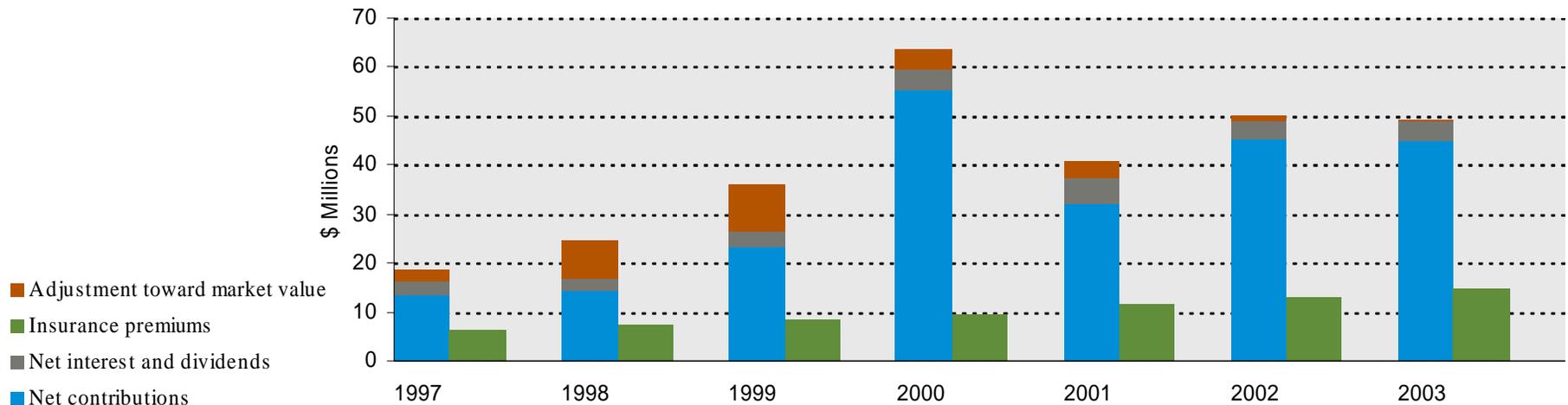


CHART 6D Hazardous Insurance

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 - 2003



SECTION 2: Valuation Results for the County Employees Retirement System

The chart shows the determination of the actuarial value of assets as of the valuation date

CHART 7A Non – Hazardous Retirement

Determination of Actuarial Value of Assets for Year Ended June 30, 2003

1. Actuarial Value of Assets of June 30, 2002			\$5,397,787,158
2. Net Cash flow			(114,253,076)
3. Expected return on valuation assets			440,604,501
4. Expected valuation assets			5,724,138,583
5. Investment gain/(loss) for year ending:	Initial Amount	Amortization	
June 30, 2003	(\$278,226,609)	(\$55,645,322)	
June 30, 2002	(626,456,069)	(125,291,214)	
June 30, 2001	(1,283,110,002)	<u>(256,622,000)</u>	
Total amortization amount			(\$437,558,536)
6. Actuarial value of assets as of June 30, 2003			<u>\$5,286,580,047</u>
7. Market value of assets			\$4,174,881,117
8. Actuarial value as a percentage of market value			<u>126.6%</u>

SECTION 2: Valuation Results for the County Employees Retirement System

The chart shows the determination of the actuarial value of assets as of the valuation date

**CHART 7B Non – Hazardous Insurance
Determination of Actuarial Value of Assets for Year Ended June 30, 2003**

1. Actuarial Value of Assets of June 30, 2002			\$450,497,307
2. Net Cash flow			59,540,807
3. Expected return on valuation assets			39,622,086
4. Expected valuation assets			549,660,199
5. Investment gain/(loss) for year ending:	Initial Amount	Amortization	
June 30, 2003	(\$28,828,353)	(\$5,765,671)	
June 30, 2002	(68,307,263)	(13,661,453)	
June 30, 2001	(50,864,852)	<u>(10,172,970)</u>	
Total amortization amount			(\$29,600,094)
6. Actuarial value of assets as of June 30, 2003			<u>\$520,060,105</u>
7. Market value of assets			\$435,667,125
8. Actuarial value as a percentage of market value			<u>119.4%</u>

SECTION 2: Valuation Results for the County Employees Retirement System

The chart shows the determination of the actuarial value of assets as of the valuation date

CHART 7C Hazardous Retirement

Determination of Actuarial Value of Assets for Year Ended June 30, 2003

1. Actuarial Value of Assets of June 30, 2002			\$1,485,511,794
2. Net Cash flow			(22,724,675)
3. Expected return on valuation assets			121,617,330
4. Expected valuation assets			1,584,404,448
5. Investment gain/(loss) for year ending:	Initial Amount	Amortization	
June 30, 2003	(\$74,447,276)	(\$14,889,455)	
June 30, 2002	(168,161,440)	(33,632,288)	
June 30, 2001	(344,389,248)	<u>(68,877,850)</u>	
Total amortization amount			(\$117,399,593)
6. Actuarial value of assets as of June 30, 2003			<u>\$1,467,004,856</u>
7. Market value of assets			\$1,168,794,472
8. Actuarial value as a percentage of market value			<u>125.5%</u>

SECTION 2: Valuation Results for the County Employees Retirement System

The chart shows the determination of the actuarial value of assets as of the valuation date

**CHART 7D Hazardous Insurance
Determination of Actuarial Value of Assets for Year Ended June 30, 2003**

1. Actuarial Value of Assets of June 30, 2002			\$234,683,878
2. Net Cash flow			30,232,672
3. Expected return on valuation assets			20,608,518
4. Expected valuation assets			285,525,069
5. Investment gain/(loss) for year ending:	Initial Amount	Amortization	
June 30, 2003	(\$15,162,699)	(\$3,032,540)	
June 30, 2002	(36,213,421)	(7,242,684)	
June 30, 2001	(30,298,832)	<u>(6,059,765)</u>	
Total amortization amount			(\$16,334,989)
6. Actuarial value of assets as of June 30, 2003			<u>\$269,190,080</u>
7. Market value of assets			\$223,212,339
8. Actuarial value as a percentage of market value			<u>120.6%</u>

SECTION 2: Valuation Results for the County Employees Retirement System

These charts show the change in the actuarial value of assets versus the market value over the past eight years

CHART 8A Non - Hazardous Retirement

Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1996 – 2003

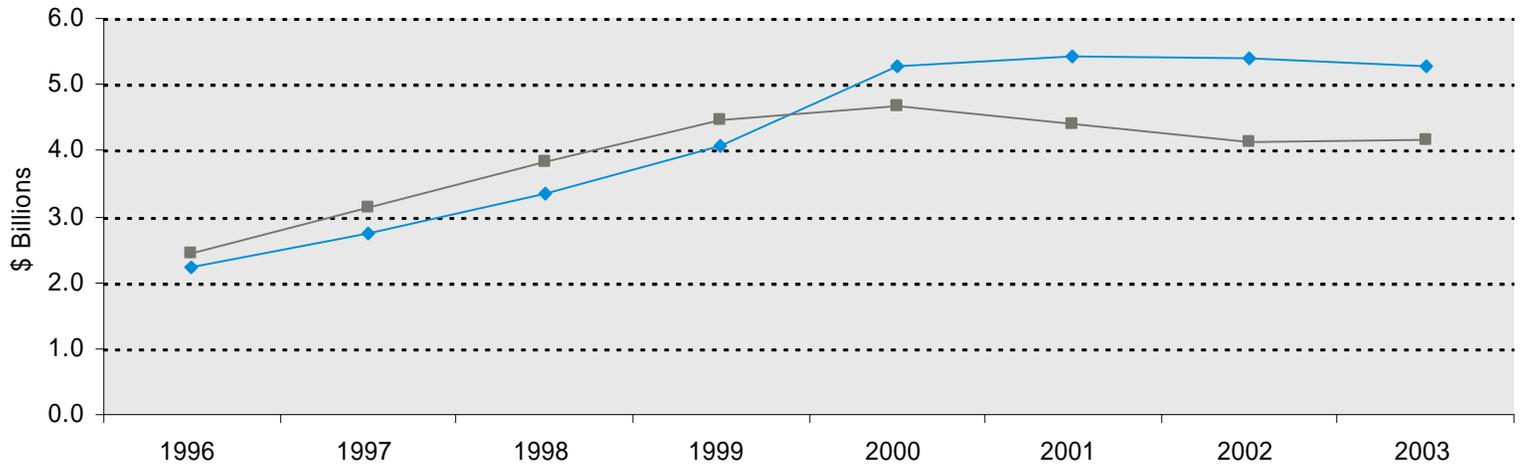
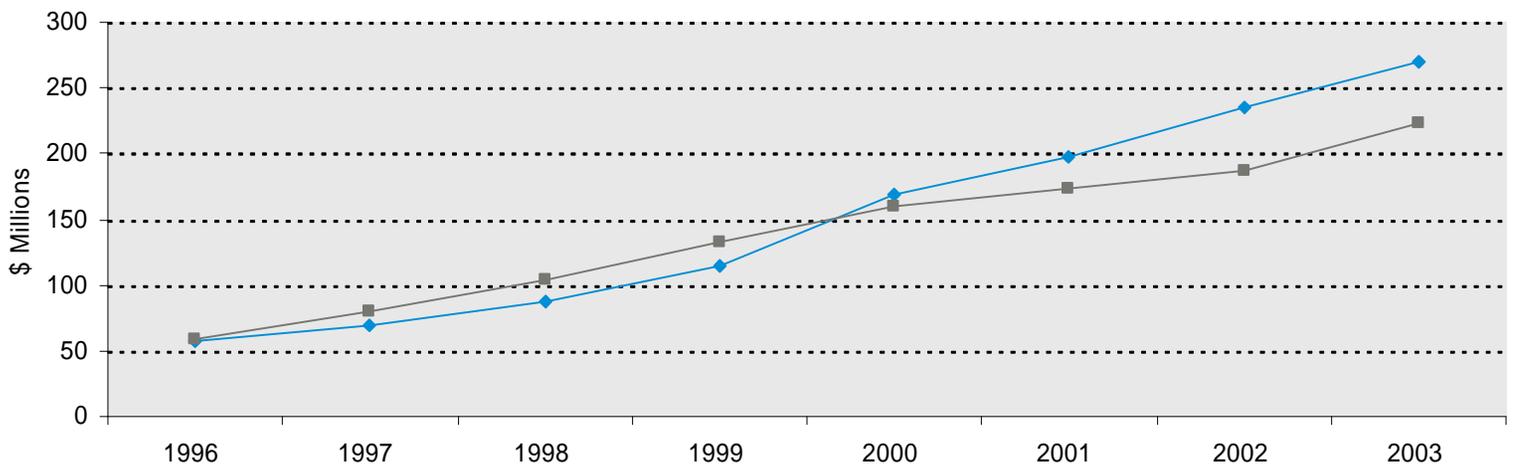


CHART 8B Non – Hazardous Insurance

Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1996 – 2003



SECTION 2: Valuation Results for the County Employees Retirement System

These charts show the change in the actuarial value of assets versus the market value over the past eight years

CHART 8C Hazardous Retirement

Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1996 - 2003

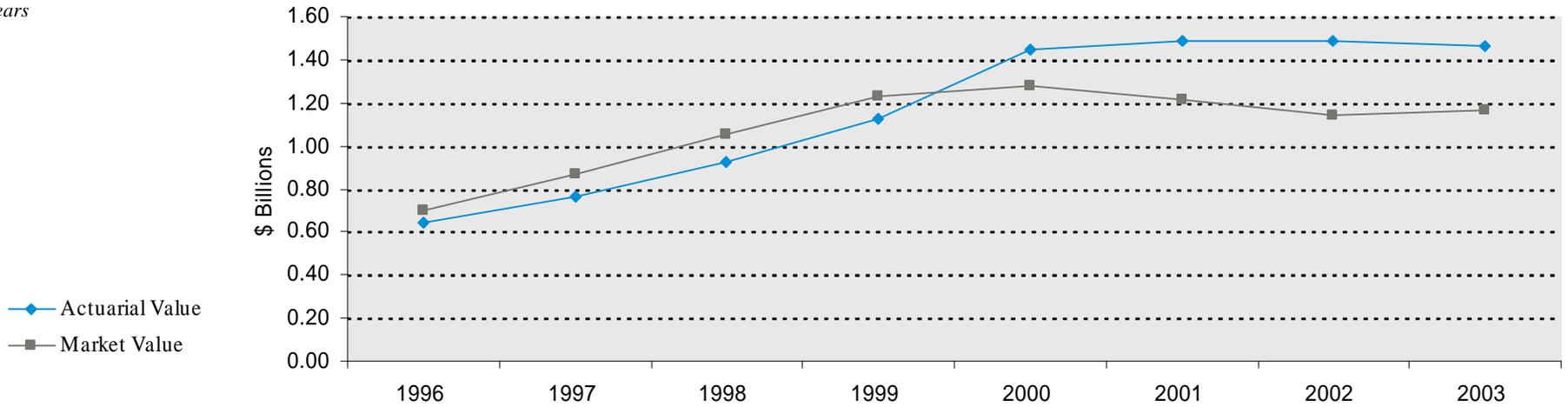
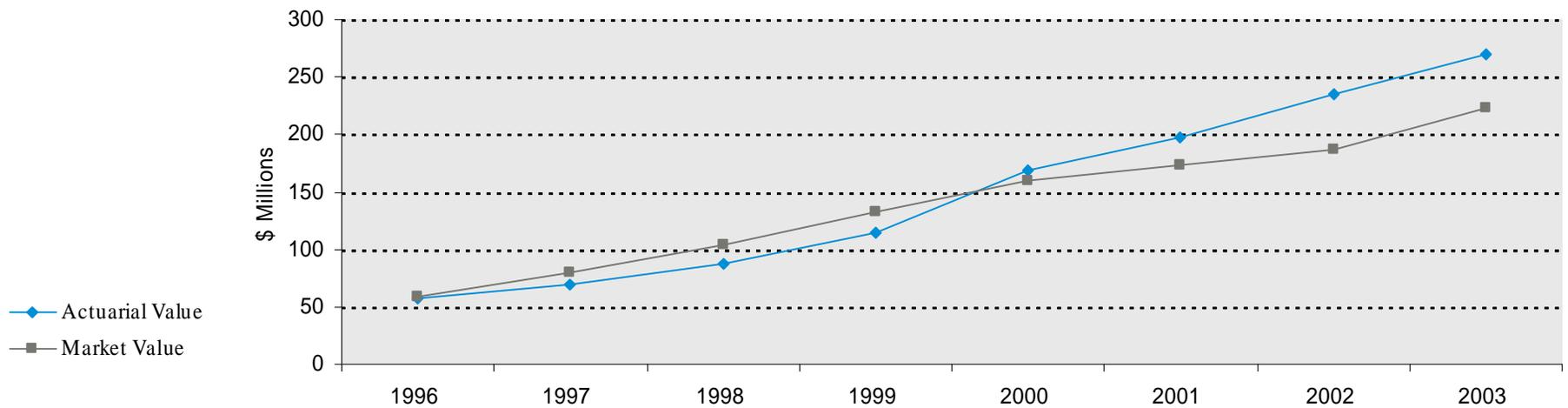


CHART 8D Hazardous Insurance

Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1996 - 2003



SECTION 2: Valuation Results for the County Employees Retirement System

C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

Chart 9 presents a summary of experience for the year. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience during the past year.

CHART 9 Actuarial Experience for Year Ended June 30, 2003	Non - Hazardous Retirement	Non - Hazardous Insurance	Hazardous Retirement	Hazardous Insurance
1. Net gain/(loss) from investments*	-\$437,558,536	-\$29,600,095	-\$117,399,593	-\$16,422,357
2. Net gain/(loss) from administrative expenses	511,492	-150,026	32,811	-63,648
3. Net gain/(loss) from other experience**	<u>37,667,871</u>	<u>74,879,106</u>	<u>-79,675,541</u>	<u>-50,137,384</u>
4. Net experience gain/(loss): (1) + (2) + (3)	-\$399,379,173	\$45,128,985	-\$197,042,323	-\$66,623,389

* Details in Chart 10

** Details in Chart 13

SECTION 2: Valuation Results for the County Employees Retirement System

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Plan’s investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.25%. Chart 10 shows the investment experience for each plan for the year.

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. Chart 11, which follows, shows the rate of return on an actuarial basis compared to the market value investment return for the last seven years.

Since the actual return for the year was less than the assumed return, each plan experienced an actuarial loss during the year ended June 30, 2003 with regard to its investments.

This chart shows the gain/(loss) due to investment experience.

CHART 10 Actuarial Value Investment Experience for Year Ended June 30, 2003	Non - Hazardous Retirement	Non - Hazardous Insurance	Hazardous Retirement	Hazardous Insurance
1. Actual return	\$3,045,965	\$10,021,991	\$4,217,738	\$4,189,622
2. Average value of assets	5,340,660,620	480,267,711	1,474,149,456	249,842,168
3. Actual rate of return: (1) ÷ (2)	0.06%	2.09%	0.29%	1.68%
4. Assumed rate of return	8.25%	8.25%	8.25%	8.25%
5. Expected return: (2) x (4)	\$440,604,501	\$39,622,086	\$121,617,331	\$20,611,979
6. Actuarial gain/(loss): (1) – (5)	<u>-\$437,558,536</u>	<u>-\$29,600,095</u>	<u>-\$117,399,593</u>	<u>-\$16,422,357</u>

SECTION 2: Valuation Results for the County Employees Retirement System

CHART 11A Non – Hazardous Retirement

Investment Return – Actuarial Value vs. Market Value: 1997 - 2003

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1997	\$111,947,000	4.96%	\$362,703,525	16.07%	\$474,650,525	21.03%	\$639,522,469	25.88%
1998	113,937,000	4.12	448,646,445	16.21	562,583,445	20.33	673,873,449	21.42
1999	120,509,000	3.59	582,815,432	17.36	703,324,432	20.95	614,212,590	15.96
2000	143,530,000	3.53	1,086,361,099	26.74	1,229,891,099	30.27	217,824,204	4.88
2001	155,881,000	2.96	20,266,015	0.38	176,147,015	3.35	-239,461,644	-5.14
2002	141,791,936	2.64	-79,867,632	-1.48	61,924,304	1.15	-185,461,064	-4.26
2003	<u>124,381,363</u>	2.33	<u>-121,335,398</u>	-2.27	<u>3,045,965</u>	0.06	<u>159,535,251</u>	3.92
Total	\$998,509,245		\$4,414,819,055		\$5,413,328,300		\$2,282,994,019	
					Average return	9.29%		2.65%

Note: Each year's yield is weighted by the average asset value in that year.

SECTION 2: Valuation Results for the County Employees Retirement System

CHART 11B Non – Hazardous Insurance

Investment Return – Actuarial Value vs. Market Value: 1997 - 2003

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1997	\$5,497,000	4.70%	\$5,487,235	4.69%	\$10,984,235	9.39%	\$25,832,581	21.29%
1998	5,373,000	3.80	14,824,200	10.48	20,197,200	14.27	32,898,822	20.46
1999	6,294,000	3.43	26,753,873	14.56	33,047,873	17.99	26,461,016	12.27
2000	7,965,000	3.21	46,582,525	18.74	54,547,525	21.95	17,083,861	6.24
2001	9,332,000	2.77	8,274,934	2.46	17,606,934	5.23	-10,987,582	-3.38
2002	6,286,566	1.55	3,397,597	0.84	9,684,163	2.38	-34,930,434	-9.55
2003	<u>7,217,788</u>	1.50	<u>2,804,203</u>	0.58	<u>10,021,991</u>	2.09	<u>10,623,304</u>	2.69
Total	\$47,965,354		\$108,124,567		\$156,089,921		\$66,981,568	
					Average return	7.54%		0.52%

Note: Each year's yield is weighted by the average asset value in that year.

SECTION 2: Valuation Results for the County Employees Retirement System

CHART 11C Hazardous Retirement

Investment Return – Actuarial Value vs. Market Value: 1997 - 2003

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1997	\$28,023,000	4.34%	\$86,904,805	13.46%	\$114,927,805	17.80%	\$163,710,501	23.29%
1998	32,158,000	4.20	126,357,182	16.49	158,515,182	20.69	181,742,476	20.83
1999	33,560,000	3.57	137,945,547	14.67	171,505,547	18.24	143,494,373	13.42
2000	39,901,000	3.55	281,307,308	25.02	321,208,308	28.56	54,094,746	4.41
2001	42,810,000	2.97	8,670,222	0.60	51,480,222	3.57	-58,424,532	-4.58
2002	41,988,855	2.84	-22,692,628	-1.54	19,296,227	1.31	-47,103,145	-3.92
2003	<u>34,198,906</u>	2.32	<u>-29,981,168</u>	-2.03	<u>4,217,738</u>	0.29	<u>46,381,709</u>	4.09
Total	\$252,639,761		\$588,511,268		\$841,151,029		\$483,896,128	
					Average return	8.79%		2.34%

Note: Each year's yield is weighted by the average asset value in that year.

SECTION 2: Valuation Results for the County Employees Retirement System

CHART 11D Hazardous Insurance

Investment Return – Actuarial Value vs. Market Value: 1997 - 2003

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1997	\$2,884,000	4.74%	\$2,571,301	4.23%	\$5,455,301	8.96%	\$13,184,665	20.93%
1998	2,782,000	3.80	7,703,398	10.52	10,485,398	14.32	17,075,114	20.56
1999	3,176,000	3.36	9,273,144	9.80	12,449,144	13.16	13,451,746	12.11
2000	4,270,000	3.11	4,232,689	3.08	8,502,689	6.19	-17,918,878	-11.57
2001	5,141,000	2.87	3,567,337	1.99	8,708,337	4.87	-6,560,963	-3.86
2002	3,234,643	1.51	1,053,973	0.49	4,288,616	2.00	-18,622,357	-9.81
2003	<u>3,626,738</u>	1.45	<u>562,884</u>	0.23	<u>4,189,622</u>	1.68	<u>5,361,912</u>	2.65
Total	\$25,114,381		\$28,964,726		\$54,079,107		\$5,971,239	
					Average return	4.36%		-2.93%

Note: Each year's yield is weighted by the average asset value in that year.

SECTION 2: Valuation Results for the County Employees Retirement System

This chart illustrates how this leveling effect has actually worked over the years 1997 - 2003

CHART 12A Non –Hazardous Retirement

Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2003

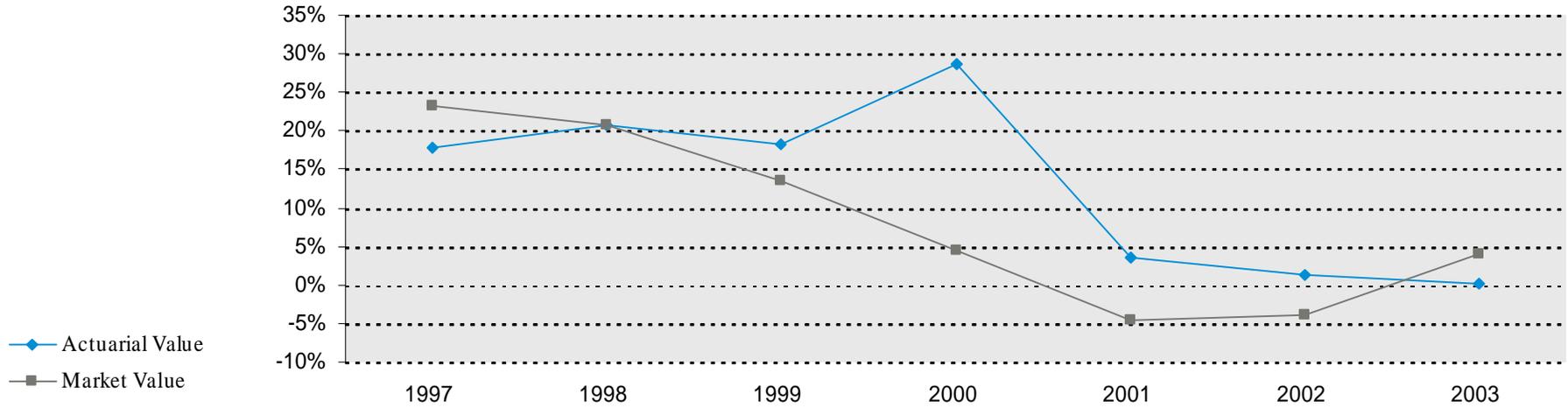
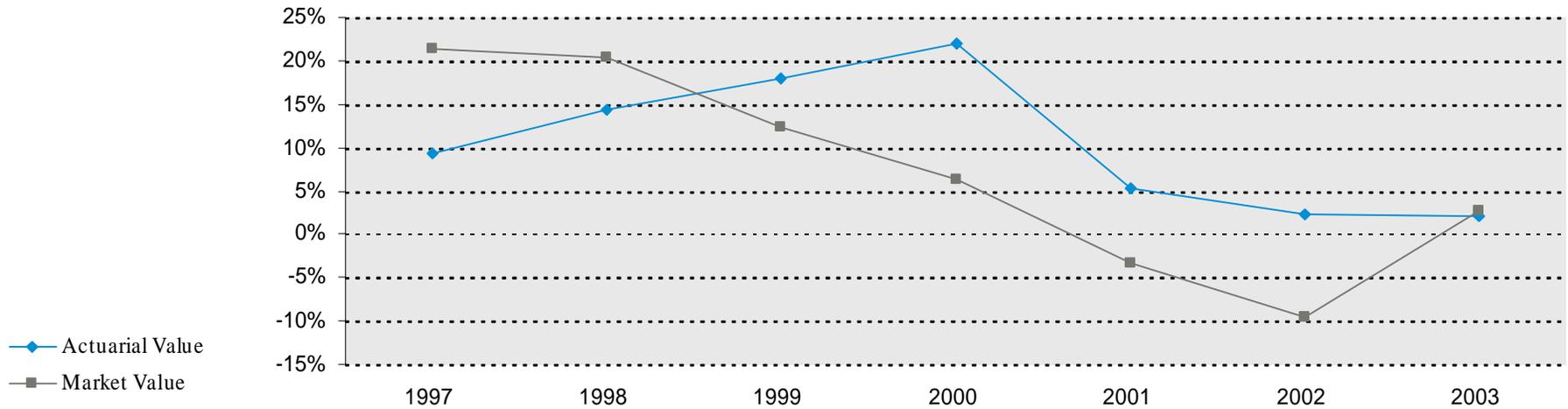


CHART 12B Non –Hazardous Insurance

Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2003



SECTION 2: Valuation Results for the County Employees Retirement System

This chart illustrates how this leveling effect has actually worked over the years 1997 - 2003 .

CHART 12C Hazardous Retirement
Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2003

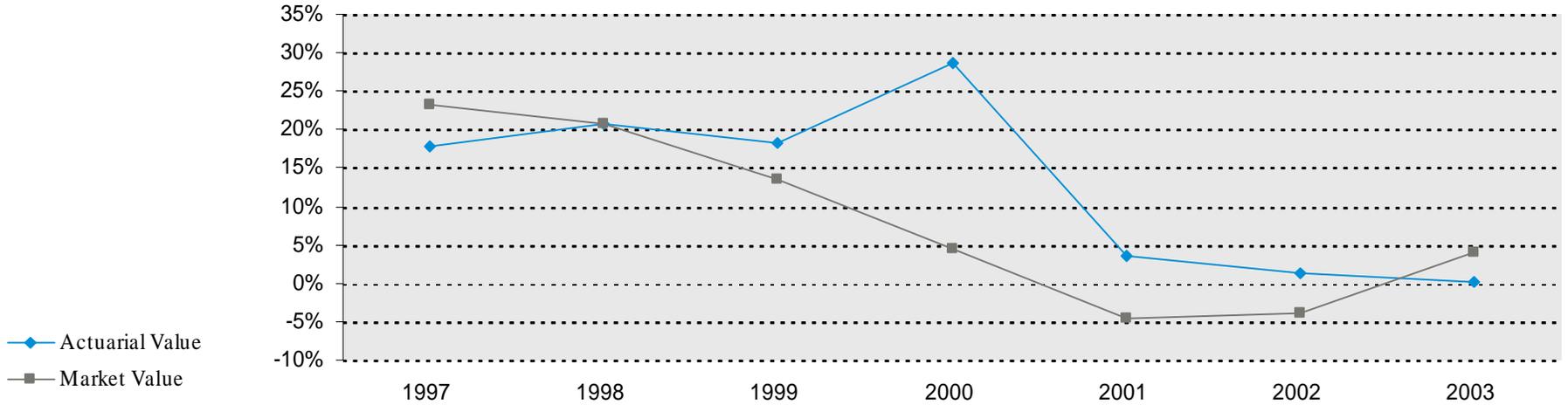
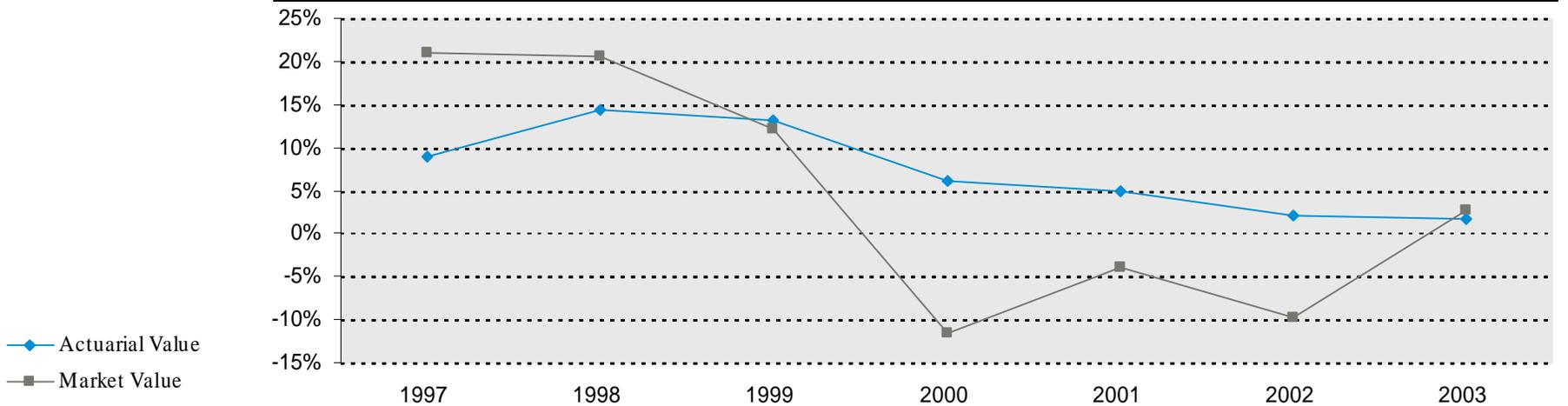


CHART 12D Hazardous Insurance
Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2003



SECTION 2: Valuation Results for the County Employees Retirement System

Administrative Expenses

Current assumptions include an assumption for the cost of administration for the retirement funds but not for the insurance funds. This assumption is modified with each valuation to estimate expenses for the upcoming fiscal year. The following summarizes the past year's experience and presents the assumptions for the next year.

Plan	Year End 2003 Assumption	Year End 2003 Actual Expense	Gain/(Loss)* for the Year	Year End 2004 Assumption
Non-Hazardous Retirement	\$8,508,924	\$8,036,414	\$511,492	\$8,100,000
Non-Hazardous Insurance	\$-0-	\$138,592	-\$150,026	\$-0-
Hazardous Retirement	\$749,025	\$718,715	\$32,811	\$800,000
Hazardous Insurance	\$-0-	\$58,797	-\$63,648	\$-0-

* Includes interest to year-end.

SECTION 2: Valuation Results for the County Employees Retirement System

Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- COLA’s granted in the year,
- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),

- the number of disability retirements, and
- salary increases different than assumed.

A brief summary of the demographic gain/(loss) experience of the Funds for the year ended June 30, 2003 is shown in the chart below.

The chart shows elements of the experience gain/(loss) for the most recent year.

CHART 13 Experience Due to Changes in Demographics for Year Ended June 30, 2003	Non-Hazardous Retirement	Non – Hazardous Insurance	Hazardous Retirement	Hazardous Insurance
1. COLA	-\$53,050,456	N/A	-\$18,929,383	N/A
2. Other	94,828,896	N/A	-60,476,158	N/A
3. Total	<u>\$37,667,871</u>	<u>\$74,879,106</u>	<u>-\$79,675,541</u>	<u>-\$50,137,384</u>
4. Percentage of Actuarial Accrued Liability	0.9%	3.4%	5.3%	5.4%

SECTION 2: Valuation Results for the County Employees Retirement System

D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded/(overfunded) actuarial accrued liability. This total amount is then divided by the projected salaries for active members to determine the funding rate.

The recommended contribution is based on a 30-year amortization of bases established each year as specified in the law governing the Plan.

Exhibit G provides details on these amortization bases.

The contribution rates as of June 30, 2003 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Charts 14 and 15 present the Recommended Contributions and reconciliations from the prior valuation.

SECTION 2: Valuation Results for the County Employees Retirement System

**CHART 14A Non-Hazardous Retirement
Recommended Contribution**

	As of June 30,			
	2003		2002	
	Amount	% of Salary	Amount	% of Salary
1. Total normal cost	\$183,158,654	10.20%	\$183,652,285	10.88%
2. Administrative expenses	8,100,000	0.45%	8,508,924	0.50%
3. Expected employee contributions	<u>-88,681,304</u>	<u>-4.94%</u>	<u>-83,676,962</u>	<u>-4.96%</u>
4. Employer normal cost: (1) + (2) + (3)	\$102,577,350	5.71%	\$108,484,247	6.42%
5. Actuarial accrued liability	4,417,597,802		4,165,355,149	
6. Actuarial value of assets	<u>5,286,580,047</u>		<u>5,397,787,158</u>	
7. Unfunded/(overfunded) actuarial accrued liability: (5) - (6)	-\$868,982,245		-\$1,232,432,009	
8. Payment on unfunded/(overfunded) actuarial accrued liability	-51,909,585	-2.89%	-68,112,351	-4.03%
9. Total recommended contribution: (4) + (8)	<u>\$50,667,765</u>	<u>2.82%</u>	<u>\$40,371,896</u>	<u>2.39%</u>
10. Projected salary	\$1,796,451,180		\$1,688,460,789	

The chart compares this valuation's recommended contribution with the prior valuation.

SECTION 2: Valuation Results for the County Employees Retirement System

The chart reconciles the contribution from the prior valuation to the amount determined in this valuation.

CHART 15A Non – Hazardous Retirement

Reconciliation of Recommended Contribution from June 30, 2002 to June 30, 2003

Recommended Contribution as of June 30, 2002	\$40,371,896
Effect of COLA for retirees	\$2,657,757
Effect of investment (gain)/loss	21,921,101
Effect of net other changes	<u>-14,282,989</u>
Total change	<u>\$10,295,869</u>
Recommended Contribution as of June 30, 2003	\$50,667,765

SECTION 2: Valuation Results for the County Employees Retirement System

**CHART 14B Non-hazardous Insurance
Recommended Contribution**

	As of June 30, 2003	
	Amount	% of Salary
1. Employer normal cost	\$161,192,881	8.97%
2. Actuarial accrued liability	2,176,963,259	
3. Actuarial value of assets	<u>520,060,105</u>	
4. Unfunded/(overfunded) actuarial accrued liability: (2) - (3)	\$1,656,903,154	
5. Payment on unfunded/(overfunded) actuarial accrued liability	94,623,016	5.27%
6. Full EANC contribution: (1) + (5)	<u>\$255,815,897</u>	<u>14.24%</u>
7. Projected salary	\$1,796,451,180	
8. Prior year's funding rate	N/A	4.95%
9. Years to reach full EANC	N/A	13
10. Additional amount this year	N/A	.71%
11. Total recommended contribution rate	N/A	5.66%

SECTION 2: Valuation Results for the County Employees Retirement System

**CHART 14C Hazardous Retirement
Recommended Contribution**

The chart compares this valuation's recommended contribution with the prior valuation.

	As of June 30,			
	2003		2002	
	Amount	% of Salary	Amount	% of Salary
1. Total normal cost	\$60,890,782	16.25%	\$56,473,020	16.31%
2. Administrative expenses	800,000	0.21%	749,025	0.22%
3. Expected employee contributions	<u>-28,714,354</u>	<u>-7.66%</u>	<u>-26,298,349</u>	<u>-7.59%</u>
4. Employer normal cost	\$32,976,428	8.80%	\$30,923,696	8.93%
5. Actuarial accrued liability	1,499,628,782		1,327,291,273	
6. Actuarial value of assets	<u>1,467,004,856</u>		<u>1,485,511,793</u>	
7. Unfunded/(overfunded) actuarial accrued liability: (5) - (6)	\$32,623,926		-\$158,220,520	
8. Payment on unfunded/(overfunded) actuarial accrued liability	1,905,978	0.51%	-7,524,590	-2.17%
9. Total recommended contribution: (4) + (8)	<u>\$34,882,406</u>	<u>9.31%</u>	<u>\$23,399,106</u>	<u>6.76%</u>
10. Projected salary	\$374,700,732		\$346,319,146	

SECTION 2: Valuation Results for the County Employees Retirement System

The chart reconciles the contribution from the prior valuation to the amount determined in this valuation.

CHART 15C Hazardous Retirement

Reconciliation of Recommended Contribution from June 30, 2002 to June 30, 2003

Recommended Contribution as of June 30, 2002	\$23,399,106
Effect of COLA for retirees	\$948,337
Effect of investment (gain)/loss	5,881,564
Effect of net other changes	<u>4,653,399</u>
Total change	<u>\$11,483,300</u>
Recommended Contribution as of June 30, 2003	\$34,882,406

SECTION 2: Valuation Results for the County Employees Retirement System

**CHART 14D Hazardous Insurance
Recommended Contribution**

	As of June 30, 2003	
	Amount	% of Salary
1. Employer normal cost	\$55,855,272	14.91%
2. Actuarial accrued liability	935,650,662	
3. Actuarial value of assets	<u>269,190,080</u>	
4. Unfunded/(overfunded) actuarial accrued liability: (2) - (3)	\$666,460,582	
5. Payment on unfunded/(overfunded) actuarial accrued liability	37,743,195	10.07%
6. Full EANC contribution: (1) + (5)	<u>\$93,598,467</u>	<u>24.98%</u>
7. Projected salary	\$374,700,732	
8. Prior year's funding rate	N/A	11.75%
9. Years to reach full EANC	N/A	13
10. Additional amount this year	N/A	1.02%
11. Total recommended contribution rate	N/A	12.77%

SECTION 3: Valuation Results for the County Employees Retirement System

**EXHIBIT A – Non-Hazardous
Table of Plan Coverage**

Category	Year Ended June 30		Change From Prior Year
	2003	2002	
Active members in valuation:			
Number	82,288	79,850	3.1%
Average age	43.8	43.0	N/A
Average service	7.6	7.6	N/A
Total salary	\$1,796,451,180	\$1,688,460,789	6.4%
Average salary	\$21,831	\$21,145	3.2%
Account balances	\$759,938,261	N/A	N/A
Total active vested members	51,009	46,937	8.7%
Vested terminated members	4,692	4,470	5.0%
Retired participants:			
Number in pay status	21,423	20,714	3.4%
Average age	68.5	N/A	N/A
Average monthly benefit	\$705	N/A	N/A
Disabled members:			
Number in pay status	2,698	2,582	4.5%
Average age	60.6	N/A	N/A
Average monthly benefit	\$682	N/A	N/A
Beneficiaries in pay status	2,971	2,851	4.2%
Inactive nonvested members due a refund	27,634	26,508	4.2%

SECTION 3: Valuation Results for the County Employees Retirement System

**EXHIBIT A – Hazardous
Table of Plan Coverage**

Category	Year Ended June 30		Change From Prior Year
	2003	2002	
Active members in valuation:			
Number	9,286	8,949	3.8%
Average age	37.3	36.3	N/A
Average service	7.8	7.8	N/A
Total salary	\$374,700,732	\$346,319,146	8.2%
Average salary	\$40,351	\$38,699	4.3%
Account balances	\$227,629,402	N/A	N/A
Total active vested members	5,904	4,855	21.6%
Vested terminated members	165	148	11.5%
Retired participants:			
Number in pay status	2,942	2,816	4.5%
Average age	57.6	N/A	N/A
Average monthly benefit	\$1,804	N/A	N/A
Disabled members:			
Number in pay status	293	430	-31.9%
Average age	50.2	N/A	N/A
Average monthly benefit	\$1,095	N/A	N/A
Beneficiaries in pay status	502	237	111.8%
Inactive nonvested members due a refund	616	552	11.6%

SECTION 3: Valuation Results for the County Employees Retirement System

EXHIBIT B – Non-Hazardous

**Members in Active Service as of June 30, 2003
By Age, Years of Service, and Average Salary**

Age	Years of Service									
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	7,509	7,210	299	--	--	--	--	--	--	--
	\$16,724	\$16,590	\$19,941	--	--	--	--	--	--	--
25 - 29	4,758	3,779	946	33	--	--	--	--	--	--
	20,568	19,557	24,273	\$30,157	--	--	--	--	--	--
30 - 34	7,187	4,832	1,830	512	13	--	--	--	--	--
	21,331	18,840	25,703	28,875	\$34,757	--	--	--	--	--
35 - 39	9,909	5,622	2,609	1,177	451	50	--	--	--	--
	21,332	17,604	22,468	31,553	33,040	\$35,078	--	--	--	--
40 - 44	12,818	5,550	3,740	1,975	914	534	105	--	--	--
	22,213	17,809	20,647	26,692	34,091	38,093	\$42,314	--	--	--
45 - 49	13,171	4,416	3,695	2,575	1,167	793	476	49	--	--
	23,460	18,733	20,610	24,627	30,242	36,388	42,565	\$46,790	--	--
50 - 54	11,436	3,117	2,788	2,604	1,473	852	447	145	10	--
	24,129	19,821	21,470	23,234	26,642	32,827	41,803	50,982	\$50,665	--
55 - 59	8,331	2,339	1,813	1,681	1,234	797	360	81	26	--
	23,061	18,907	20,999	22,792	24,745	28,036	36,876	45,704	63,669	--
60 - 64	4,747	1,243	1,083	986	681	452	232	49	13	8
	21,619	16,890	19,133	21,329	24,970	25,367	34,051	44,924	49,338	\$83,322
65 - 69	1,619	508	380	321	221	116	48	16	5	4
	18,717	14,861	17,095	19,427	21,467	22,462	29,677	44,066	57,022	64,305
70 & over	803	214	183	177	126	64	26	4	5	4
	16,958	14,269	14,187	17,183	18,983	18,108	32,514	25,755	31,015	67,971
Total	82,288	38,830	19,366	12,041	6,280	3,658	1,694	344	59	16
	\$21,831	\$18,097	\$21,465	\$24,763	\$27,982	\$31,847	\$39,454	\$47,664	\$54,977	\$74,730

SECTION 3: Valuation Results for the County Employees Retirement System

EXHIBIT B – Hazardous

**Members in Active Service as of June 30, 2003
By Age, Years of Service, and Average Salary**

Age	Years of Service									
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	792	775	17	--	--	--	--	--	--	--
	\$27,532	\$27,325	\$36,949	--	--	--	--	--	--	--
25 - 29	1,363	1,103	255	5	--	--	--	--	--	--
	35,076	33,579	41,351	\$45,070	--	--	--	--	--	--
30 - 34	1,980	961	784	233	2	--	--	--	--	--
	39,221	34,379	42,302	48,837	\$37,050	--	--	--	--	--
35 - 39	1,823	512	449	671	178	13	--	--	--	--
	42,986	33,772	41,222	48,335	52,646	\$58,396	--	--	--	--
40 - 44	1,351	307	232	382	342	77	11	--	--	--
	44,688	34,732	39,164	46,839	51,954	56,079	\$58,687	--	--	--
45 - 49	964	216	132	234	179	120	74	9	--	--
	46,186	33,898	39,570	45,100	51,141	58,971	61,631	\$70,319	--	--
50 - 54	579	163	77	113	67	46	81	30	2	--
	46,545	36,161	40,405	44,980	48,709	53,933	63,616	61,244	\$63,306	--
55 - 59	268	115	42	42	26	11	10	17	5	--
	40,202	31,881	38,941	39,834	46,182	50,280	53,443	65,714	78,775	--
60 - 64	131	55	23	22	20	5	1	1	2	2
	39,962	30,865	40,844	44,150	46,615	48,938	70,236	84,432	73,212	\$74,322
65 - 69	22	14	3	5	--	--	--	--	--	--
	34,922	30,435	50,516	38,126	--	--	--	--	--	--
70 & over	13	2	4	4	1	1	--	--	--	1
	34,199	26,610	21,669	32,964	73,104	51,996	--	--	--	47,736
Total	9,286	4,223	2,018	1,711	815	273	177	57	9	3
	\$40,351	\$32,742	\$41,170	\$47,068	\$51,334	\$56,720	\$61,943	\$64,417	\$74,101	\$65,460

SECTION 3: Valuation Results for the County Employees Retirement System

EXHIBIT C – Non-Hazardous Retirement

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended June 30, 2003	Year Ended June 30, 2002
Contribution income:		
Employer contributions	\$11,855,694	\$4,663,371
Member contributions	125,300,584	121,573,670
Less administrative expenses	<u>-8,036,414</u>	<u>-7,187,049</u>
Net contribution income	\$129,119,864	\$119,049,992
Investment income:		
Interest, dividends and other income	\$138,657,919	\$164,909,449
Adjustment toward market value	-118,492,757	-79,867,632
Less investment fees	<u>-17,119,197</u>	<u>-23,117,513</u>
Net investment income	<u>3,045,965</u>	<u>61,924,304</u>
Total income available for benefits	\$132,165,829	\$180,974,296
Less benefit payments:		
Benefit payments	\$230,316,847	\$196,658,618
Refunds	<u>10,213,452</u>	<u>7,520,556</u>
Net benefit payments	\$240,530,299	\$204,179,174
Change in reserve for future benefits	-\$108,364,470	-\$23,204,878

SECTION 3: Valuation Results for the County Employees Retirement System

EXHIBIT C – Non-Hazardous Insurance

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended June 30, 2003	Year Ended June 30, 2002
Contribution income:		
Employer contributions	\$99,234,843	\$102,150,788
Less administrative expenses	<u>-138,592</u>	<u>-260,214</u>
Net contribution income	\$99,096,251	\$101,890,574
Investment income:		
Interest, dividends and other income	\$8,180,059	\$7,553,323
Adjustment toward market value	2,974,632	3,397,597
Less investment fees	<u>-1,132,700</u>	<u>-1,266,757</u>
Net investment income	<u>10,021,991</u>	<u>9,684,163</u>
Total income available for benefits	\$109,118,242	\$111,574,737
Less healthcare premium subsidies:	\$39,385,015	\$32,694,301
Change in reserve for future benefits	\$69,733,227	\$78,880,436

SECTION 3: Valuation Results for the County Employees Retirement System

EXHIBIT C – Hazardous Retirement

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended June 30, 2003	Year Ended June 30, 2002
Contribution income:		
Employer contributions	\$16,905,556	\$10,904,214
Member contributions	36,202,579	35,164,272
Less administrative expenses	<u>-718,715</u>	<u>-634,783</u>
Net contribution income	\$52,389,420	\$45,433,703
Investment income:		
Interest, dividends and other income	\$39,168,079	\$51,140,925
Adjustment toward market value	-29,981,168	-22,692,628
Less investment fees	<u>-4,969,173</u>	<u>-9,152,070</u>
Net investment income	<u>4,217,738</u>	<u>19,296,227</u>
Total income available for benefits	\$56,607,158	\$64,729,930
Less benefit payments:		
Benefit payments	\$72,531,779	\$63,494,374
Refunds	<u>1,793,971</u>	<u>1,641,709</u>
Net benefit payments	\$74,325,750	\$65,136,083
Change in reserve for future benefits	-\$17,718,592	-\$406,153

SECTION 3: Valuation Results for the County Employees Retirement System

EXHIBIT C – Hazardous Insurance

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended June 30, 2003	Year Ended June 30, 2002
Contribution income:		
Employer contributions	\$45,243,950	\$45,730,333
Less administrative expenses	<u>-58,797</u>	<u>-115,183</u>
Net contribution income	\$45,185,153	\$45,615,150
Investment income:		
Interest, dividends and other income	\$4,216,739	\$3,982,762
Adjustment toward market value	646,792	1,126,092
Less investment fees	<u>-590,001</u>	<u>-748,119</u>
Net investment income	<u>4,273,530</u>	<u>4,360,735</u>
Total income available for benefits	\$49,458,683	\$49,975,885
Less healthcare premium subsidies:	\$14,868,573	\$13,095,137
Change in reserve for future benefits	\$34,590,110	\$36,880,748

SECTION 3: Valuation Results for the County Employees Retirement System

**EXHIBIT D – Non-Hazardous Retirement
Table of Financial Information**

	Year Ended June 30, 2003	Year Ended June 30, 2002
Cash equivalents	\$614,921	\$11,693,000
Accounts receivable:		
Investment accounts receivable	\$225,031	\$323,000
Year end interest receivable	22,423,993	26,609,000
Year end accounts receivable	21,426,306	19,403,000
Alternate Plan year end accounts receivable	<u>1,362,202</u>	<u>1,706,000</u>
Total accounts receivable	45,437,532	48,041,000
Investments:		
Bonds	\$1,452,706,088	\$1,389,803,000
Stocks	2,226,016,563	2,222,749,000
Mortgage	211,499,185	242,677,000
Real estate	4,741,593	6,200,000
Fixed assets	577,640	0
Short-term investments	<u>238,154,160</u>	<u>209,119,000</u>
Total investments at market value	4,133,695,229	4,070,548,000
Total assets	\$4,179,747,682	\$4,130,282,000
Less accounts payable:	-\$3,714,907	-\$3,525,000
Net assets at market value	<u>\$4,174,881,117</u>	<u>\$4,126,756,301</u>
Net assets at actuarial value	<u>\$5,286,580,047</u>	<u>\$5,397,787,158</u>

SECTION 3: Valuation Results for the County Employees Retirement System

EXHIBIT D – Non-Hazardous Insurance

Table of Financial Information

	Year Ended June 30, 2003	Year Ended June 30, 2002
Cash equivalents	\$63,551	\$9,375,000
Accounts receivable:		
Investment accounts receivable	\$22,463	\$22,000
Year end interest receivable	1,103,783	948,000
Year end accounts receivable	<u>10,695,236</u>	<u>11,261,000</u>
Total accounts receivable	11,821,482	12,231,000
Investments:		
Bonds	\$42,819,734	\$38,489,000
Stocks	351,228,039	281,588,000
Short-term Investments	<u>29,904,766</u>	<u>23,930,000</u>
Total investments at market value	<u>423,952,539</u>	<u>344,007,000</u>
Total assets	\$435,837,572	\$365,613,000
Less accounts payable:	-\$170,446	-\$282,000
Net assets at market value	<u>\$435,667,125</u>	<u>\$365,332,585</u>
Net assets at actuarial value	<u>\$520,060,105</u>	<u>\$450,497,307</u>

SECTION 3: Valuation Results for the County Employees Retirement System

**EXHIBIT D – Hazardous Retirement
Table of Financial Information**

	Year Ended June 30, 2003	Year Ended June 30, 2002
Cash equivalents	\$217,552	\$2,954,000
Accounts receivable:		
Investment accounts receivable	\$63,810	\$87,000
Year end interest receivable	6,180,263	7,403,000
Year end accounts receivable	8,194,121	8,959,000
Alternate Plan year end accounts receivable	<u>1,795,357</u>	<u>2,090,000</u>
Total accounts receivable	16,233,551	18,539,000
Investments:		
Bonds	\$398,906,715	\$381,820,000
Stocks	624,403,527	611,186,000
Motgage	58,421,019	67,019,000
Real Estate	3,055,076	3,381,000
Fixed Assets	51,593	0
Short-term Investments	<u>68,395,341</u>	<u>60,351,000</u>
Total investments at market value	1,153,233,271	1,123,757,000
Total assets	\$1,169,684,374	\$1,145,250,000
Less accounts payable:	-\$889,902	-\$900,000
Net assets at market value	<u>\$1,168,794,472</u>	<u>\$1,144,349,093</u>
Net assets at actuarial value	<u>\$1,467,004,856</u>	<u>\$1,485,511,793</u>

SECTION 3: Valuation Results for the County Employees Retirement System

EXHIBIT D – Hazardous Insurance

Table of Financial Information

	Year Ended June 30, 2003	Year Ended June 30, 2002
Cash equivalents	\$81,750	\$4,358,000
Accounts receivable:		
Investment accounts receivable	\$11,584	\$12,000
Year end interest receivable	559,656	481,000
Year end accounts receivable	<u>3,652,483</u>	<u>4,457,000</u>
Total accounts receivable	4,223,723	4,950,000
Investments:		
Bonds	\$21,287,077	\$19,134,000
Stocks	182,395,584	146,842,000
Short-term Investments	<u>15,308,134</u>	<u>12,381,000</u>
Total investments at market value	<u>218,990,795</u>	<u>178,357,000</u>
Total assets	\$223,296,268	\$187,665,000
Less accounts payable:	-\$83,910	-\$131,000
Net assets at market value	<u>\$223,212,339</u>	<u>\$187,533,847</u>
Net assets at actuarial value	<u>\$269,190,080</u>	<u>\$234,683,878</u>

SECTION 3: Valuation Results for the County Employees Retirement System

**EXHIBIT E – Non-Hazardous Retirement
Development of the Fund Through June 30, 2003**

Year Ended June 30	Employer Contributions	Member Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
1996	\$95,660,478	\$57,702,044	\$2,201,761,515	\$4,645,029	\$112,670,975	\$2,237,808,033
1997	105,774,000	63,590,000	474,650,525	5,268,000	126,358,000	2,750,196,558
1998	107,526,000	74,382,000	562,583,445	5,620,000	142,863,000	3,346,205,003
1999	110,591,000	98,566,000	703,324,432	6,519,000	179,940,000	4,072,227,435
2000	106,587,000	96,676,000	1,229,891,099	7,350,000	213,998,000	5,284,033,534
2001	48,914,000	101,597,000	176,147,015	7,820,000	179,037,000	5,423,834,549
2002	4,663,371	121,573,670	61,924,304	10,029,562	204,179,174	5,397,787,158
2003	11,855,694	125,300,584	3,045,965	10,879,055	240,530,299	5,286,580,047

* Net of investment fees

SECTION 3: Valuation Results for the County Employees Retirement System

EXHIBIT E – Non-Hazardous Insurance

Development of the Fund Through June 30, 2003

Year Ended June 30	Employer Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
1997	\$27,504,000	\$10,502,235	\$25,000	\$13,497,000	\$134,688,096
1998	29,271,000	20,197,200	25,000	15,600,000	168,531,296
1999	47,902,000	33,047,873	52,000	17,492,000	231,937,169
2000	55,214,000	54,547,525	114,000	21,942,000	319,642,694
2001	62,292,000	17,606,934	244,000	27,539,000	371,758,628
2002	102,150,788	9,684,163	401,971	32,694,301	450,497,307
2003	99,234,843	10,021,991	309,021	39,385,015	520,060,105

* *Net of investment fees*

SECTION 3: Valuation Results for the County Employees Retirement System

EXHIBIT E – Hazardous Retirement

Development of the Fund Through June 30, 2003

Year Ended June 30	Employer Contributions	Member Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
1997	\$39,552,000	\$15,752,000	\$114,927,805	\$811,000	\$47,812,000	\$763,829,310
1998	42,298,000	16,581,000	158,515,182	902,000	53,264,000	927,057,492
1999	48,291,000	22,918,000	171,505,547	939,000	44,181,553	1,124,651,486
2000	51,739,000	28,476,000	321,208,308	1,085,000	79,447,000	1,445,542,794
2001	20,983,000	27,279,000	51,480,222	974,000	57,645,000	1,486,666,016
2002	10,904,214	35,164,272	19,296,227	1,382,853	65,136,083	1,485,511,793
2003	16,905,556	36,202,579	4,217,738	1,507,060	74,325,750	1,467,004,856

* *Net of investment fees*

SECTION 3: Valuation Results for the County Employees Retirement System

EXHIBIT E – Hazardous Insurance

Development of the Fund Through June 30, 2003

Year Ended June 30	Employer Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
1997	\$13,305,000	\$5,430,301	\$25,000	\$6,260,000	\$69,832,681
1998	14,275,000	10,460,398	25,000	7,538,000	87,055,079
1999	23,383,000	12,449,144	25,000	8,272,000	114,590,223
2000	55,214,000	8,502,689	52,000	9,597,000	168,657,912
2001	32,149,000	8,708,337	109,000	11,531,000	197,875,249
2002	45,730,333	4,360,735	187,302	13,095,137	234,683,878
2003	45,243,950	4,273,530	142,705	14,868,573	269,190,080

* *Net of investment fees*

SECTION 3: Valuation Results for the County Employees Retirement System

EXHIBIT F – Non-Hazardous Retirement

Table of Amortization Bases

Date Established	Initial Years	Initial Amount	Annual Payment*	Years Remaining	Outstanding Balance
06/30/1990	30	\$93,672,421	\$8,803,133	17.00	\$118,579,377
06/30/1991	30	61,472,822	5,506,891	18.00	77,458,374
06/30/1992	30	-125,111,651	-10,683,561	19.00	-156,443,886
06/30/1993	30	-28,358,370	-2,308,290	20.00	-35,094,731
06/30/1994	30	59,026,195	4,579,726	21.00	72,118,398
06/30/1995	30	-35,766,009	-2,645,120	22.00	-43,048,094
06/30/1996	30	-188,502,047	-13,288,206	23.00	-223,054,769
06/30/1997	30	-200,122,489	-13,435,596	24.00	-232,193,379
06/30/1998	30	-311,976,854	-19,947,770	25.00	-354,334,198
06/30/1999	30	-379,088,077	-23,084,643	26.00	-420,828,295
06/30/2000	30	-804,685,873	-46,668,095	27.00	-871,875,737
06/30/2001	30	250,075,433	13,812,600	28.00	264,118,659
06/30/2002	30	529,261,185	27,841,037	29.00	544,222,252
06/30/2003	30	391,393,784	<u>19,608,309</u>	30.00	<u>391,393,784</u>
Total			-\$51,909,585		-\$868,982,245

* Level percentage of salary

SECTION 3: Valuation Results for the County Employees Retirement System

EXHIBIT F – Non-Hazardous Insurance

Table of Amortization Bases

Date Established	Initial Years	Initial Amount	Annual Payment*	Years Remaining	Outstanding Balance
06/30/1996	30	\$901,011,537	\$63,515,631	23.00	\$1,066,168,364
06/30/1997	30	29,886,573	2,006,491	24.00	34,676,085
06/30/1998	30	62,468,342	3,994,220	25.00	70,949,718
06/30/1999	30	-21,106,379	-1,285,277	26.00	-23,430,338
06/30/2000	30	70,199,744	4,071,264	27.00	76,061,301
06/30/2001	30	247,855,413	13,689,980	28.00	261,773,972
06/30/2002	30	72,249,680	3,800,592	29.00	74,292,022
06/30/2003	30	96,412,030	<u>4,830,115</u>	30.00	<u>96,412,030</u>
Total			\$94,623,016		\$1,656,903,154

* *Level percentage of salary*

SECTION 3: Valuation Results for the County Employees Retirement System

EXHIBIT F – Hazardous Retirement

Table of Amortization Bases

Date Established	Initial Years	Initial Amount	Annual Payment*	Years Remaining	Outstanding Balance
06/30/1990	30	\$68,584,978	\$6,445,470	17.00	\$86,821,332
06/30/1991	30	29,934,803	2,681,635	18.00	37,719,127
06/30/1992	30	-12,941,304	-1,105,087	19.00	-16,182,248
06/30/1993	30	-7,291,213	-593,484	20.00	-9,023,195
06/30/1994	30	1,854,577	143,893	21.00	2,265,929
06/30/1995	30	24,831,672	1,836,457	22.00	29,887,487
06/30/1996	30	-65,565,268	-4,621,938	23.00	-77,583,484
06/30/1997	30	-62,908,989	-4,223,512	24.00	-72,990,552
06/30/1998	30	-50,329,820	-3,218,084	25.00	-57,163,140
06/30/1999	30	-97,060,446	-5,910,515	26.00	-107,747,473
06/30/2000	30	-194,399,700	-11,274,292	27.00	-210,631,735
06/30/2001	30	79,413,115	4,386,283	28.00	83,872,635
06/30/2002	30	143,568,600	7,552,223	29.00	147,626,973
06/30/2003	30	195,752,270	<u>9,806,929</u>	30.00	<u>195,752,270</u>
Total			\$1,905,978		\$32,623,926

* Level percentage of salary

SECTION 3: Valuation Results for the County Employees Retirement System

EXHIBIT F – Hazardous Insurance

Table of Amortization Bases

Date Established	Initial Years	Initial Amount	Annual Payment*	Years Remaining	Outstanding Balance
06/30/1996	30	\$318,111,968	\$22,424,888	23.00	\$376,422,391
06/30/1997	30	53,367,623	3,582,935	24.00	61,920,120
06/30/1998	30	15,379,222	983,346	25.00	17,467,270
06/30/1999	30	-13,162,362	-801,525	26.00	-14,611,629
06/30/2000	30	17,607,673	1,021,164	27.00	19,077,884
06/30/2001	30	82,316,738	4,546,661	28.00	86,939,314
06/30/2002	30	10,745,007	565,226	29.00	11,048,745
06/30/2003	30	108,196,487	<u>5,420,500</u>	30.00	<u>108,196,487</u>
Total			\$37,743,195		\$666,460,582

* *Level percentage of salary*

SECTION 3: Valuation Results for the County Employees Retirement System

EXHIBIT G

Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial

Assumptions:

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Normal Cost:

The amount of contributions required to fund the benefit allocated to the current year of service.

Actuarial Accrued Liability

For Actives:

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial Accrued Liability

For Pensioners:

The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Unfunded Actuarial Accrued

Liability:

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

SECTION 3: Valuation Results for the County Employees Retirement System

Amortization of the Unfunded Actuarial Accrued Liability:

Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

Investment Return:

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

SECTION 4: Reporting Results for the County Employees Retirement System

EXHIBIT I – Non-Hazardous Retirement Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 3,757 beneficiaries in pay status)		27,092
2. Members inactive during year ended June 30, 2003 with vested rights		4,692
3. Members active during the year ended June 30, 2003		82,288
Fully vested	51,009	
Not vested	31,279	
4. Inactive nonvested members due a refund as of June 30, 2003		27,634

The actuarial factors as of the valuation date are as follows:

1. Normal cost, including administrative expenses		\$191,258,654
2. Present value of future benefits		6,508,864,976
3. Present value of future normal costs		2,091,267,175
4. Actuarial accrued liability		4,417,597,802
Retired participants and beneficiaries	\$2,005,650,002	
Inactive members with vested rights	39,448,625	
Active members	2,349,116,216	
Inactive nonvested members due a refund	23,382,959	
5. Actuarial value of assets (\$4,174,881,117 at market value as reported by Carpenter, Mountjoy & Bressler)		5,286,580,047
6. Unfunded actuarial accrued liability		-\$868,982,245

SECTION 4: Reporting Results for the County Employees Retirement System

EXHIBIT I – Non-Hazardous Insurance
Summary of Actuarial Valuation Results

The actuarial factors as of the valuation date are as follows:

1. Normal cost, including administrative expenses		\$161,192,881
2. Present value of future benefits		4,034,417,402
3. Present value of future normal costs		1,857,454,143
4. Actuarial accrued liability		2,176,963,259
Retired participants and beneficiaries	\$727,125,108	
Inactive members with vested rights	72,652,156	
Active members	1,377,185,995	
5. Actuarial value of assets (\$435,667,125 at market value as reported by Carpenter, Mountjoy & Bressler)		520,060,105
6. Unfunded actuarial accrued liability		\$1,656,903,154

SECTION 4: Reporting Results for the County Employees Retirement System

EXHIBIT I – Hazardous Retirement

Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 502 beneficiaries in pay status)		3,737
2. Members inactive during year ended June 30, 2003 with vested rights		165
3. Members active during the year ended June 30, 2003		9,286
Fully vested	5,904	
Not vested	3,382	
5. Inactive nonvested members due a refund as of June 30, 2003		616

The actuarial factors as of the valuation date are as follows:

1. Normal cost, including administrative expenses		\$61,690,782
2. Present value of future benefits		2,103,191,508
3. Present value of future normal costs		603,562,725
4. Actuarial accrued liability		1,499,628,782
Retired participants and beneficiaries	\$765,660,960	
Inactive members with vested rights	3,207,120	
Active members	729,824,036	
Inactive non-vested members	936,666	
5. Actuarial value of assets (\$1,168,794,472 at market value as reported by Carpenter, Mountjoy & Bressler)		1,467,004,856
6. Unfunded actuarial accrued liability		\$32,623,926

SECTION 4: Reporting Results for the County Employees Retirement System

**EXHIBIT I – Hazardous Insurance
Summary of Actuarial Valuation Results**

The actuarial factors as of the valuation date are as follows:

1. Normal cost, including administrative expenses		\$55,855,272
2. Present value of future benefits		1,509,475,965
3. Present value of future normal costs		573,825,304
4. Actuarial accrued liability		935,650,662
Retired participants and beneficiaries	\$395,406,822	
Inactive members with vested rights	5,869,525	
Active members	534,374,315	
5. Actuarial value of assets (\$223,212,339 at market value as reported by Carpenter, Mountjoy & Bressler)		269,190,080
6. Unfunded actuarial accrued liability		\$666,460,582

SECTION 4: Reporting Results for the County Employees Retirement System

EXHIBIT II – Non-Hazardous Retirement

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/Overfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)]/ (c)
06/30/1996	\$2,237,808,033	\$2,083,374,317	-\$154,433,716	107.41%	\$1,137,192,560	-13.58%
06/30/1997	2,750,196,558	2,390,620,093	-359,576,465	115.04	1,297,116,204	-27.72
06/30/1998	3,346,205,003	2,663,946,276	-682,258,727	125.61	1,437,594,574	-47.46
06/30/1999	4,072,227,435	2,991,420,884	-1,080,806,551	136.13	1,346,601,939	-80.26
06/30/2000	5,284,033,534	3,368,601,134	-1,915,432,400	156.86	1,452,058,248	-131.91
06/30/2001	5,423,834,549	3,706,282,212	-1,717,552,337	146.34	1,544,973,296	-111.17
06/30/2002	5,397,787,158	4,165,355,149	-1,232,432,009	129.59	1,663,183,629	-74.10
06/30/2003	5,286,580,047	4,417,597,802	-868,982,245	119.67	1,796,451,180	-48.37

SECTION 4: Reporting Results for the County Employees Retirement System

EXHIBIT II – Non-Hazardous Insurance

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/Overfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
06/30/1996	\$110,203,861	\$1,011,215,398	\$901,011,537	10.90%	\$1,137,192,560	79.23%
06/30/1997	134,688,096	1,091,055,849	956,367,753	12.34	1,297,116,204	73.73
06/30/1998	168,531,296	1,213,339,747	1,044,808,451	13.89	1,437,594,574	72.68
06/30/1999	231,937,169	1,282,874,286	1,050,937,117	18.08	1,346,601,939	78.04
06/30/2000	319,642,694	1,466,716,928	1,147,074,234	21.79	1,452,058,248	79.00
06/30/2001	371,758,628	1,793,710,768	1,421,952,140	20.73	1,544,973,296	92.04
06/30/2002	450,497,307	1,977,577,038	1,527,079,731	22.78	1,663,183,629	91.82
06/30/2003	520,060,105	2,176,963,259	1,656,903,154	23.89	1,796,451,180	92.23

SECTION 4: Reporting Results for the County Employees Retirement System

EXHIBIT II – Hazardous Retirement

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/Overfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)]/ (c)
06/30/1996	\$642,220,505	\$694,942,156	\$52,721,651	92.41%	\$211,638,457	24.91%
06/30/1997	763,829,310	754,308,810	-9,520,500	101.26	225,094,837	-4.23
06/30/1998	927,057,492	865,966,626	-61,090,866	107.05	236,180,023	-25.87
06/30/1999	1,124,651,486	963,711,775	-160,939,711	116.70	256,201,726	62.82
06/30/2000	1,445,542,794	1,084,553,697	-360,989,097	133.28	288,575,870	-125.09
06/30/2001	1,486,666,016	1,193,860,442	-292,805,574	124.53	316,700,304	-92.46
06/30/2002	1,485,511,793	1,327,291,273	-158,220,520	111.92	345,849,277	-45.75
06/30/2003	1,467,004,856	1,499,628,782	32,623,926	97.82	374,700,732	8.71

SECTION 4: Reporting Results for the County Employees Retirement System

EXHIBIT II – Hazardous Insurance

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/Overfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
06/30/1996	\$57,332,380	\$375,444,348	\$318,111,968	15.27%	\$211,638,457	151.31%
06/30/1997	69,832,681	450,304,608	380,471,927	15.51	225,094,837	169.03
06/30/1998	87,055,079	493,286,363	406,231,284	17.65	236,180,023	172.00
06/30/1999	114,590,223	518,280,115	403,689,892	22.11	256,201,726	157.57
06/30/2000	168,657,912	599,936,029	431,278,117	28.11	288,575,870	149.45
06/30/2001	197,875,249	721,605,292	523,730,043	27.42	316,700,304	165.37
06/30/2002	234,683,878	781,184,974	546,501,096	30.04	345,849,277	158.02
06/30/2003	269,190,080	935,650,662	666,460,582	28.77	374,700,732	177.86

SECTION 4: Reporting Results for the County Employees Retirement System

EXHIBIT III – Non-Hazardous

Supplementary Information Required by the GASB

Valuation date	June 30, 2003
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Level percent of salary
Remaining amortization period	17 to 30 years
Asset valuation method	5 year smoothing method

Actuarial assumptions:

Investment rate of return	8.25%
Payroll growth	5.00%

Plan membership:

Retired participants and beneficiaries receiving benefits	27,092
Terminated members entitled to, but not yet receiving benefits	4,692
Active members	<u>82,288</u>
Total	114,072

SECTION 4: Reporting Results for the County Employees Retirement System

**EXHIBIT III – Non-Hazardous (continued)
Supplemental Insurance Required by the GASB**

Age	Contracts in Force – Retirees and Dependents					
	Total	100% Paid	75% Paid	50% Paid	25% Paid	0% Paid
Single; Pre-Medicare	5,054	3,288	482	466	243	575
Family; Pre-Medicare	213	193	4	8	6	2
Parent Plus; Pre-Medicare	244	169	9	3	4	59
Couple; Pre-Medicare	642	501	53	63	23	2
Medicare Regular	2,630	64	334	729	824	679
Medicare High Option	<u>9,958</u>	<u>4,008</u>	<u>1,907</u>	<u>1,793</u>	<u>925</u>	<u>1,325</u>
Total	18,741	8,223	2,789	3,062	2,025	2,642

SECTION 4: Reporting Results for the County Employees Retirement System

**EXHIBIT III – Hazardous
Supplementary Information Required by the GASB**

Valuation date	June 30, 2003
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Level percent of salary
Remaining amortization period	17 to 30 years
Asset valuation method	5 year smoothing method
Actuarial assumptions:	
Investment rate of return	8.25%
Payroll growth	5.00%
Plan membership:	
Retired participants and beneficiaries receiving benefits	3,737
Terminated members entitled to, but not yet receiving benefits	165
Active members	<u>9,286</u>
Total	13,188

SECTION 4: Reporting Results for the County Employees Retirement System

**EXHIBIT III – Hazardous (continued)
Supplementary Information Required by the GASB**

Age	Contracts in Force – Retirees and Dependents					
	Total	100% Paid	75% Paid	50% Paid	25% Paid	0% Paid
Single; Pre-Medicare	1,010	899	45	45	16	5
Family; Pre-Medicare	557	544	6	5	2	--
Parent Plus; Pre-Medicare	223	207	6	3	7	--
Couple; Pre-Medicare	822	804	12	5	1	--
Medicare Regular	40	4	6	18	12	--
Medicare High Option	<u>808</u>	<u>666</u>	<u>70</u>	<u>44</u>	<u>25</u>	<u>3</u>
Total	3,460	3,124	145	120	63	8

SECTION 4: Reporting Results for the County Employees Retirement System

EXHIBIT IV Non - Hazardous

Actuarial Assumptions and Actuarial Cost Method

Mortality Rates:

Healthy: 1983 Group Annuity Mortality Table with margins.

Disabled: Pension Benefit Guaranty Corporation Table for Disabled Lives Receiving Social Security.

Age	Termination Rates before Retirement: <u>Rate (%)</u>			
	Mortality		Disability	Withdrawal*
	Male	Female		
20	0.04	0.02	0.03	2.40
25	0.05	0.03	0.03	2.40
30	0.06	0.03	0.04	2.40
35	0.09	0.05	0.06	2.40
40	0.12	0.07	0.10	2.00
45	0.22	0.10	0.21	1.80
50	0.39	0.16	0.42	1.60
55	0.61	0.25	0.79	1.20
60	0.92	0.42	1.39	0.20

*Withdrawal rates during the first five years of employment are 35%, 10%, 7%, 5%, and 4%.

SECTION 4: Reporting Results for the County Employees Retirement System

Retirement Rates:	Age	Retirement Probability*
	55-57	0.04
	58-59	0.05
	60-61	0.06
	62	0.25
	63-64	0.10
	65	0.50
	66-67	0.20
	68	0.25
	69	0.40
	70 and older	1.00

*Retirement probability is 0.25 at first age member is eligible for unreduced retirement benefits.

**Retirement Age for Inactive
Vested Participants:** 65

Percent Married: 100%

Age of Spouse: Females 3 years younger than males.

Net Investment Return: 8.25%

Salary Increases:	Years of Service	Rate (%)
	1	12.00
	2	10.00
	3	8.00
	4 or more	6.50

Payroll Growth: 5.0%

SECTION 4: Reporting Results for the County Employees Retirement System

Retiree Medical Insurance Election: Future retirees will select medical coverage in the same proportion that current retirees have selected coverage.

Monthly Contribution Rates:

**Pre-Medicare Coverage
Rate in Effect on Valuation Date**

Region 1	\$278.76
Region 2	292.00
Region 3	397.08
Region 4	269.44

<u>Carrier</u>	<u>Medicare Rate</u>		<u>Contracts in Force</u>	
	<u>Low Option</u>	<u>High Option</u>	<u>Low Option</u>	<u>High Option</u>
Anthem Blue Seniors	\$103.18	\$286.53	3,329	20,772
Anthem Blue Seniors Network	98.18	281.53	539	1,701
Bankers Life Medicare	82.70	195.35	732	410

**Weighted Medicare Coverage
Rate in Effect on Valuation Date**

	<u>Low Option</u>	<u>High Option</u>
All Members	\$99.34	\$284.52

SECTION 4: Reporting Results for the County Employees Retirement System

Medical Contribution Rate Increases:	<u>Year</u>	<u>Rate(%)</u>
	2003-2005	10.00
	2006-2010	9.00
	2011-2015	8.00
	2016-2020	7.50
	2021 and thereafter	7.00

Members with Multiple Service Records: For active members with service in more than one system, the liability has been valued as follows:

- Service under all systems is aggregated for purposes of determining benefit eligibility.
- Future service is projected only under the system in which the member is currently active.
- The actual benefit under each system is determined based only on service (past and projected future service, if applicable) under that system.
- The liability is determined under each system based on the actuarial assumptions used for the system in which the member is currently active. This liability is then included in the valuation of the system in which the service has been earned (or is projected to be earned).

For inactive members with service in more than one system, the benefit attributable to the service under each system is determined, and the liability for that benefit is then included in the valuation of the system in which the service was earned.

Administrative Expenses: \$8,100,000

SECTION 4: Reporting Results for the County Employees Retirement System

Actuarial Value of Assets:

Sum of expected valuation assets and amortizations of the investment gains/(losses) from the current and four prior years. Expected valuation assets is equal to the actuarial value at the beginning of the year plus the expected return on assets using the assumed valuation interest rate from the prior year plus actual cash flows from the prior year. The current year investment gain/(loss) is determined as the difference between actual market value and expected actuarial value less any unamortized portions of the gain/(loss) from the previous four years.

Actuarial Cost Method:

Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by service, with Normal Cost determined as if the current benefit accrual rate had always been in effect.

SECTION 4: Reporting Results for the County Employees Retirement System

**EXHIBIT IV Hazardous
Actuarial Assumptions and Actuarial Cost Method**

Mortality Rates:

Healthy: 1983 Group Annuity Mortality Table with margins plus 0.05% per year.
Disabled: Pension Benefit Guaranty Corporation Table for Disabled Lives Receiving Social Security plus 0.05% per year.

Age	Termination Rates before Retirement: <u>Rate (%)</u>			
	Mortality		Disability	Withdrawal
	Male	Female		
20	0.09	0.07	0.04	3.04
25	0.10	0.08	0.04	3.04
30	0.11	0.08	0.05	3.38
35	0.14	0.10	0.07	2.44
40	0.17	0.12	0.13	1.50
45	0.27	0.15	0.26	0.75
50	0.44	0.21	0.53	0.00
55	0.66	0.30	0.99	0.00
60	0.97	0.47	1.74	0.00

Retirement Rates: 60% will retire as soon as eligible for unreduced benefit and balance will continue until age 55.

Retirement Age for Inactive Vested Participants: 55

Percent Married: 100%

Age of Spouse: Females 3 years younger than males.

SECTION 4: Reporting Results for the County Employees Retirement System

Dependent Children: For duty related death benefits, it is assumed that the employee is survived by two dependent children each age 6.

Net Investment Return: 8.25%

Salary Increases:	Years of Service	Rate (%)
	1	12.00
2	10.00	
3	8.00	
4 or more	6.50	

Payroll Growth: 5.0%

Retiree Medical Insurance Election: Future retirees will select medical coverage in the same proportion that current retirees have selected coverage.

Monthly Contribution Rates:	Pre-Medicare Coverage Rate in Effect on Valuation Date			
	Single	Family	Parent Plus	Couple
Region 1	\$278.76	\$627.24	\$376.32	\$564.52
Region 2	292.00	657.04	394.24	591.32
Region 3	397.08	893.56	536.12	804.20
Region 4	269.44	606.40	363.84	545.76

Carrier	Medicare Rate		Contracts in Force	
	Low Option	High Option	Low Option	High Option
Anthem Blue Seniors	\$103.18	\$286.53	3,329	20,772
Anthem Blue Seniors Network	98.18	281.53	539	1,701
Barkers Life Medicare	82.70	195.35	732	410

SECTION 4: Reporting Results for the County Employees Retirement System

	Weighted Medicare Coverage Rate in Effect on Valuation Date	
	<u>Low Option</u>	<u>High Option</u>
All Members	\$99.34	\$284.52

Medical Contribution Rate Increases:	<u>Year</u>	<u>Rate(%)</u>
	2003-2005	10.00
	2006-2010	9.00
	2011-2015	8.00
	2016-2020	7.50
	2021 and thereafter	7.00

-
- Members with Multiple Service Records:** For active members with service in more than one system, the liability has been valued as follows:
- Service under all systems is aggregated for purposes of determining benefit eligibility.
 - Future service is projected only under the system in which the member is currently active.
 - The actual benefit under each system is determined based only on service (past and projected future service, if applicable) under that system.
 - The liability is determined under each system based on the actuarial assumptions used for the system in which the member is currently active. This liability is then included in the valuation of the system in which the service has been earned (or is projected to be earned).

For inactive members with service in more than one system, the benefit attributable to the service under each system is determined, and the liability for that benefit is then included in the valuation of the system in which the service was earned.

SECTION 4: Reporting Results for the County Employees Retirement System

Administrative Expenses: \$800,000

Actuarial Value of Assets: Sum of expected valuation assets and amortization of the investment gains/(losses) from the current and four prior years. Expected valuation assets is equal to the actuarial value at the beginning of the year plus the expected return on assets using the assumed valuation interest rate from the prior year plus actual cash flows from the prior year. The current year investment gain/(loss) is determined as the difference between actual market value and expected actuarial value less any unamortized portions of the gain/(loss) from the previous four years.

Actuarial Cost Method: Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by service, with Normal Cost determined as if the current benefit accrual rate had always been in effect.

SECTION 4: Reporting Results for the County Employees Retirement System

**EXHIBIT V Non – Hazardous
Summary of Plan Provisions**

This exhibit summarizes the major provisions of the System included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year: July 1 through June 30

Normal Retirement:

<i>Age Requirement</i>	65
<i>Service Requirement</i>	None
<i>Amount</i>	If a member has at least 48 months of service, the monthly benefit is 2.20% times final average compensation times years of service. Final compensation is the average salary during the five highest paid fiscal years. If the months of service credit during the highest five-year period is less than forty-eight, one or more additional fiscal years shall be used. If a member has less than 48 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest.

Early Retirement:

<i>Requirement</i>	Age 55 with 60 months service or any age with 25 years service.
<i>Amount</i>	Normal retirement benefit reduced by 5% per year for the first five years and 4% per year for the next five years for each year the member is younger than age 65 or has less than 27 years service, whichever is smaller.

SECTION 4: Reporting Results for the County Employees Retirement System

Disability:

<i>Age Requirement</i>	None
<i>Service Requirement</i>	60 months
<i>Amount</i>	Normal retirement benefit except that service credit will be added to total service for the period from the last day of paid employment to the member's 65 th birthday or until the combined total service as of the last day of paid employment and added service equals 25 years. The total amount of service credit added shall not exceed the member's actual service credit on the last day of paid employment. For members with at least 25 years of service but less than 27 years service, total service shall be 27 years. For employees with 27 or more years of service credit, actual service will be used. A contributing member in a non-hazardous position who is disabled in the line of duty is entitled to a retirement benefit of not less than 25% of the member's final monthly rate of pay plus 10% of the member's final monthly rate of pay for each dependent child. The maximum dependent child's benefit is 40% of the member's final monthly rate of pay.

Vesting:

<i>Age Requirement</i>	None
<i>Service Requirement</i>	60 months
<i>Amount</i>	Normal retirement benefit deferred to normal retirement age or reduced benefit payable at early retirement age.
<i>Normal Retirement Age</i>	65

SECTION 4: Reporting Results for the County Employees Retirement System

Pre-Retirement Death Benefit (not in line of duty):

<i>Requirement</i>	Any age with 60 months service or age 65 with 48 months service.
<i>Amount</i>	Benefit equal to the benefit the member would have received had the member retired on the day before the date of death and elected a 100% joint and survivor form. Benefit is actuarially reduced if member is less than age 55 at date of death.

Spouse's Pre-Retirement Death Benefit (in line of duty):

<i>Requirement</i>	None
<i>Amount</i>	The spouse may choose (1) a \$10,000 lump sum payment and monthly payments of 25% of the member's final monthly rate of pay or (2) benefits based on the member's age, years of service and final compensation at date of death.

Dependent Child's Death Benefit (in line of duty):

<i>Requirement</i>	None
<i>Amount</i>	10% of member's final monthly rate of pay up to a maximum of 40%.

Post-Retirement Death Benefit:

<i>Lump - sum Benefit</i>	\$5,000
<i>Husband and Wife</i>	The choice of payment option selected by the member will determine the monthly benefits provided to the beneficiary upon the member's death.

SECTION 4: Reporting Results for the County Employees Retirement System

**EXHIBIT V Hazardous
Summary of Plan Provisions**

This exhibit summarizes the major provisions of the System included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year: July 1 through June 30

Normal Retirement:

<i>Age Requirement</i>	55
<i>Service Requirement</i>	None
<i>Amount</i>	If a member has at least 60 months of service, the monthly benefit is 2.50% times final average compensation times years of service. Final compensation is the average salary during the three highest paid fiscal years. If the months of service credit during the highest three-year period is less than twenty-four, one or more additional fiscal years shall be used. If a member has less than 60 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest.

Early Retirement:

<i>Requirement</i>	Age 50 with 15 years of service or any age with 20 years service.
<i>Amount</i>	Normal retirement benefit reduced by 5.5% per year for each year the member is younger than age 55 or has less than 20 years service, whichever is smaller.

SECTION 4: Reporting Results for the County Employees Retirement System

Disability:

<i>Age Requirement</i>	None
<i>Service Requirement</i>	60 months
<i>Amount</i>	Normal retirement benefit except that service credit will be added to total service for the period from the last day of plan employment to the member's 55 th birthday or until the combined total service as of the last day of paid employment and added service equals 20 years. The total amount of service credit added shall not exceed the member's actual service credit on the last day of paid employment. For employees with 20 or more years of service credit, actual service credit will be used. A member in a hazardous position who is disabled in the line of duty is entitled to a retirement benefit of not less than 25% of the member's final monthly rate of pay plus 10% of his final monthly rate of pay for each dependent child. The maximum dependent child's benefit is 40% of the member's final monthly rate of pay.

Vesting:

<i>Age Requirement</i>	None
<i>Service Requirement</i>	60 months
<i>Amount</i>	Normal retirement benefit deferred to normal retirement age or reduced benefit payable at early retirement age.
<i>Normal Retirement Age</i>	55

SECTION 4: Reporting Results for the County Employees Retirement System

Pre-Retirement Death Benefit (not in line of duty):

<i>Requirement</i>	Any age with 60 months service or age 65 with 48 months service.
<i>Amount</i>	Benefit equal to benefit member would have received had the member retired on the day before the date of death and elected a 100% joint and survivor form. Benefit is actuarially reduced if member is less than age 55 at date of death.

Spouse's Pre-Retirement Death Benefit (in line of duty):

<i>Requirement</i>	None
<i>Amount</i>	The spouse may choose (1) a \$10,000 lump sum payment and monthly payments of 25% of the member's final monthly rate of pay or (2) benefits based on the member's age, years of service and final compensation at date of death.

Dependent Non-Spouse's Death Benefit (in line of duty):

<i>Requirement</i>	None
<i>Amount</i>	The non-spouse may choose (1) a \$10,000 lump sum payment or (2) benefits based upon the member's age, years of service and final compensation at date of death.

Dependent Child's Death Benefit (in line of duty):

<i>Requirement</i>	None
<i>Amount</i>	10% of member's final monthly
<i>Amount</i>	10% of member's final monthly rate of pay up to a maximum of 40%.

Post-Retirement Death Benefit:

<i>Lump - sum Benefit</i>	\$5,000
<i>Husband and Wife</i>	The choice of payment option selected by the member will determine the monthly benefits provided to the beneficiary upon the member's death.

State Police Retirement System

*Actuarial Valuation and Review
as of June 30, 2003*

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THE PARENT OF THE SEGAL COMPANY
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November 6, 2003

*Board of Trustees
State Police Retirement System
Perimeter Park West
1260 Louisville Road
Frankfort, Kentucky 40601-6124*

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2003. It summarizes the actuarial data used in the valuation, establishes the funding requirements for the fiscal year beginning July 1, 2004 and analyzes the preceding year's experience.

The census information on which our calculations were based was prepared by the System and the financial information was provided by the Auditor. That assistance is gratefully acknowledged.

This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

THE SEGAL COMPANY

By:


*Leon F. (Rocky) Joyner, Jr., ASA, MAAA
Vice President and Actuary*


*K. Eric Fredén, FSA, MAAA
Associate Actuary*

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SECTION 1: Valuation Summary for the State Police Retirement System

Purpose

This report has been prepared by The Segal Company to present a valuation of the State Police Employees Retirement System as of June 30, 2003. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Board;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2003, provided by the Board;
- The assets of the Plan as of June 30, 2003, provided by the Auditor;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

- The State Police Retirement System's basic financial goal is to establish contributions which fully fund the system's liabilities, and which, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.
- The retirement contribution rate is determined using the Entry Age Normal Cost (EANC) Method. Under this method, the employer contribution required is the sum of the normal cost, administration expenses and the sum of the 30-year amortization payments established each valuation due to changes in the Unfunded Actuarial Accrued Liability.
- The medical insurance contribution rate is determined in a similar method except that the actual contribution rate is determined by increasing the prior premium rate by an amount necessary to raise the insurance rate to the full EANC amount by the year 2016.
- The rates calculated in this report may be adopted by the Board for July 1, 2004 through June 30, 2005.

SECTION 1: Valuation Summary for the State Police Retirement System

- > The following summarizes the required contributions for the year beginning July 1, 2004 and compares them to the prior valuation amounts.

<u>Plan</u>	<u>July 1, 2004</u> <u>Rate</u>	<u>July 1, 2003</u> <u>Rate</u>
Retirement	8.49%	2.64%
Insurance	<u>19.59</u>	<u>18.94</u>
Total	28.08%	21.58%

- > The increase in total rate is due to:

Investment loss	4.30%
Retiree COLA	0.95
Insurance Phase-in	0.65
Other experience	<u>0.60</u>
Total change	6.50%

- > The actuarial valuation report as of June 30, 2003 is based on financial information as of that date. Changes in the value of assets subsequent to that date, to the extent that they exist, are not reflected. Declines in asset values will increase the actuarial cost of the Plan, while increases will decrease the actuarial cost of the Plan. Because the actuarial value of assets involves a smoothing method, changes in market value are not fully reflected immediately in the actuarial value of assets. Rather, that effect is spread over a period of years.

SECTION 1: Valuation Summary for the State Police Retirement System

- As indicated in Section 2, Subsection B of this report, the total unrecognized investment losses as of June 30, 2003 are:

<u>Plan</u>	<u>Unrecognized investment losses as of 6/30/2003</u>
Retirement	\$93,947,344
Insurance	\$18,194,350

These investment losses will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 8.25% per year (net of expenses) on a market value basis will result in investment losses on the actuarial value of assets in the next few years. Therefore, if the actual market return is equal to the assumed 8.25% rate and all other actuarial assumptions are met, the contribution requirements would still increase in each of the next few years.

SECTION 1: Valuation Summary for the State Police Retirement System

Summary of Key Valuation Results

	Valuation Date	
	June 30, 2003	June 30, 2002
Contribution rates for next fiscal year:		
Retirement	8.49%	2.64%
Insurance	<u>19.59%</u>	<u>18.94%</u>
Total	28.08%	21.58%
Funded status as of valuation date:		
Retirement		
Actuarial Accrued Liability	\$414,881,459	\$380,790,346
Actuarial Value of Assets	413,063,576	438,955,465
Funded Ratio on Actuarial Value of Assets	99.56%	115.27%
Market Value of Assets	\$319,116,232	\$328,744,331
Funded Ratio on Market Value of Assets	76.92%	86.33%
Insurance		
Actuarial Accrued Liability	\$184,501,205	\$165,445,412
Actuarial Value of Assets	90,747,967	86,867,391
Funded Ratio on Actuarial Value of Assets	49.19%	52.51%
Market Value of Assets	\$72,553,617	\$68,074,444
Funded Ratio on Market Value of Assets	39.32%	41.15%
Demographic data as of valuation date:		
Number of retired participants and beneficiaries	941	897
Number of vested former members	21	20
Number of former members due a refund	92	83
Number of active members	1,019	1,002
Total Salary	\$43,760,832	\$43,961,844
Average Salary	42,945	43,874

SECTION 2: Valuation Results for the State Police Retirement System

A. PARTICIPANT DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, vested terminated members, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these member groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B, and C.

Active Members

Plan costs are affected by the age, years of service and salaries of active members. In this year's valuation, there were 1,019 active members with an average age of 35.9, average years of service of 10.9 years and average salaries of \$42,945. The 1,002 active members in the prior valuation had an average age of 43.0, average service of 11.4 years and average salaries of \$43,874.

Inactive Members

There were 21 members with a vested right to a deferred or immediate vested benefit.

In addition, there were 92 members entitled to a return of their employee contributions.

Retired Participants and Beneficiaries

As of June 30, 2003, 826 retired participants and 115 beneficiaries were receiving total monthly benefits of \$2,342,962. For comparison, in the previous valuation, there were 819 retired participants and 78 beneficiaries receiving monthly benefits of \$2,137,556.

SECTION 2: Valuation Results for the State Police Retirement System

A historical perspective of how the member population has changed over the past eight valuations can be seen in this chart.

CHART 1

Member Population: 1996 – 2003

Year Ended June 30	Active Members	Vested Terminated Members*	Retired Participants and Beneficiaries	Ratio of Non-Actives to Actives
1996	1,002	8	625	0.63
1997	943	9	669	0.72
1998	954	11	739	0.79
1999	985	14	762	0.79
2000	1,023	9	797	0.79
2001	1,016	12	842	0.84
2002	1,002	20	897	0.92
2003	1,019	21	941	0.94

**Excludes terminated members due a refund of employee contributions*

SECTION 2: Valuation Results for the State Police Retirement System

These graphs show a distribution of active members by age and by years of service.

CHART 2
Distribution of Active Members by Age as of June 30, 2003

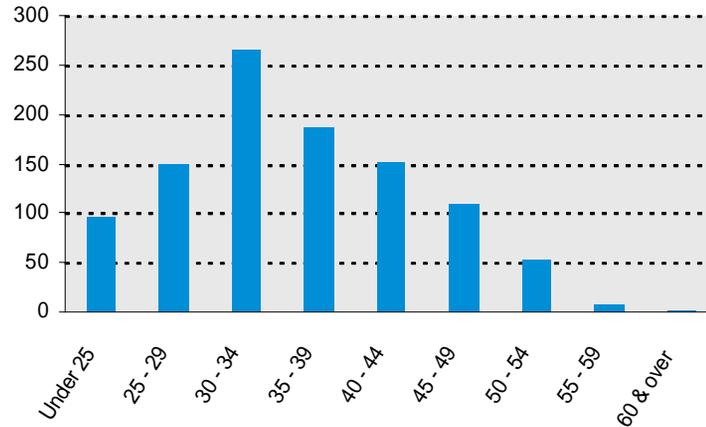
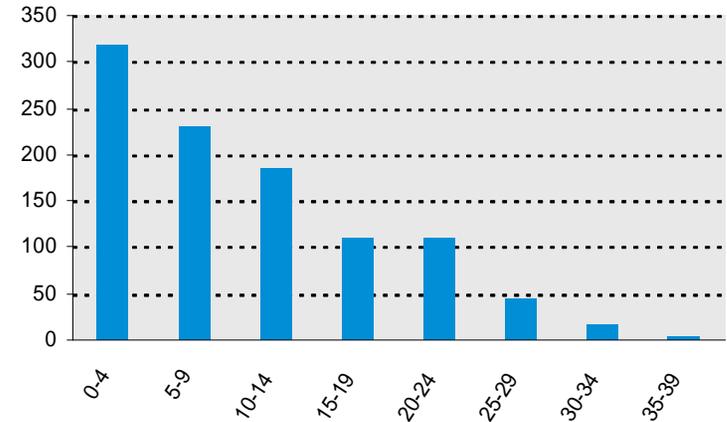


CHART 3
Distribution of Active Members by Years of Service as of June 30, 2003



These graphs show a distribution of the current retired participants based on their monthly amount and age, by type of pension.

CHART 4
Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2003

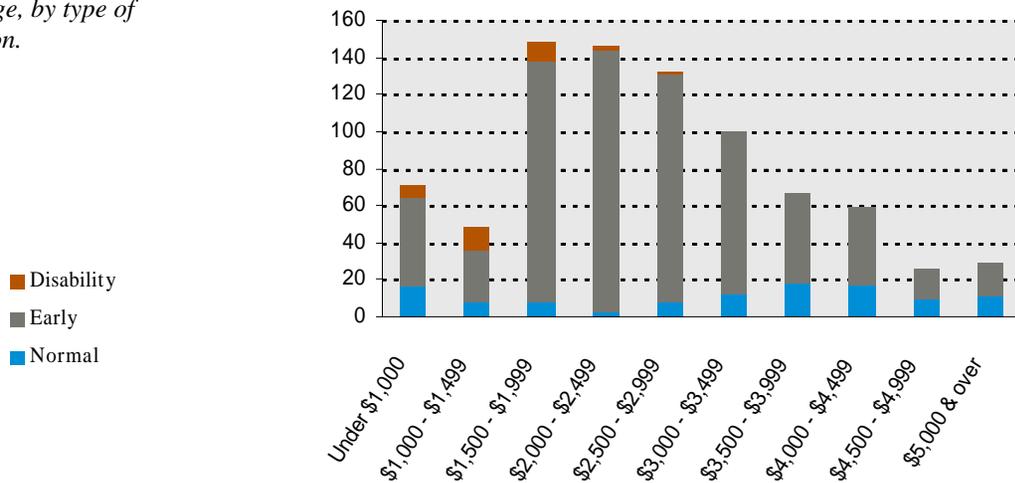
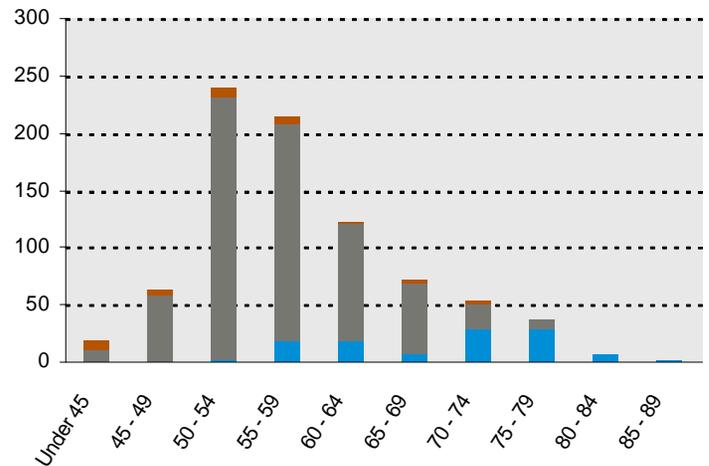


CHART 5
Distribution of Retired Participants by Type and by Age as of June 30, 2003



SECTION 2: Valuation Results for the State Police Retirement System

B. FINANCIAL INFORMATION

Retirement plan funding anticipates that, over the long term, both net contributions (less administrative expenses) and net investment earnings (less investment fees) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits D, E and F.

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

SECTION 2: Valuation Results for the State Police Retirement System

CHART 6A Retirement

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 - 2003

The chart depicts the components of changes in the actuarial value of assets over the last eight years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

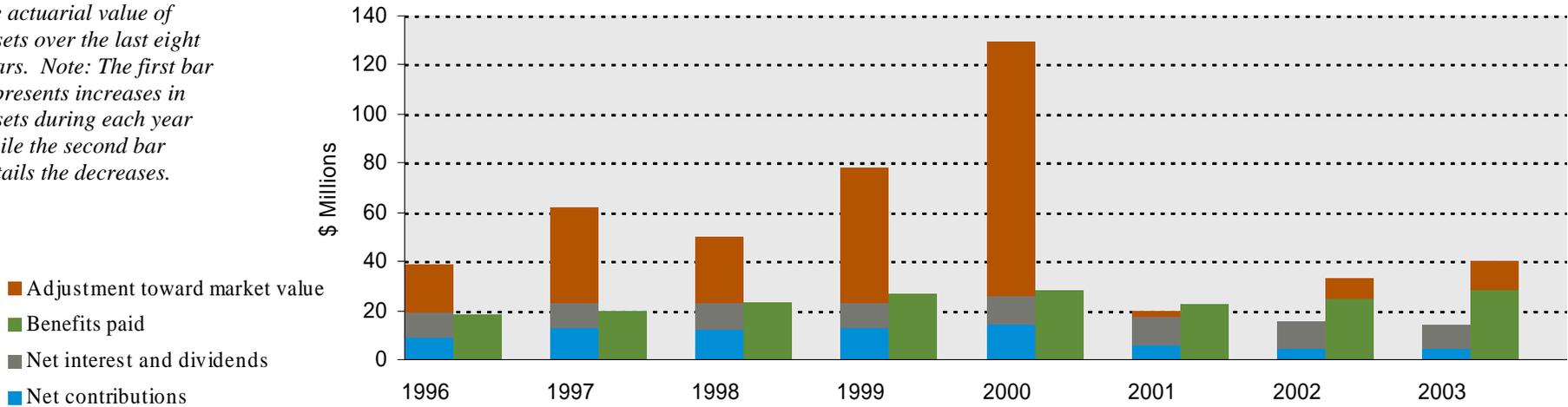
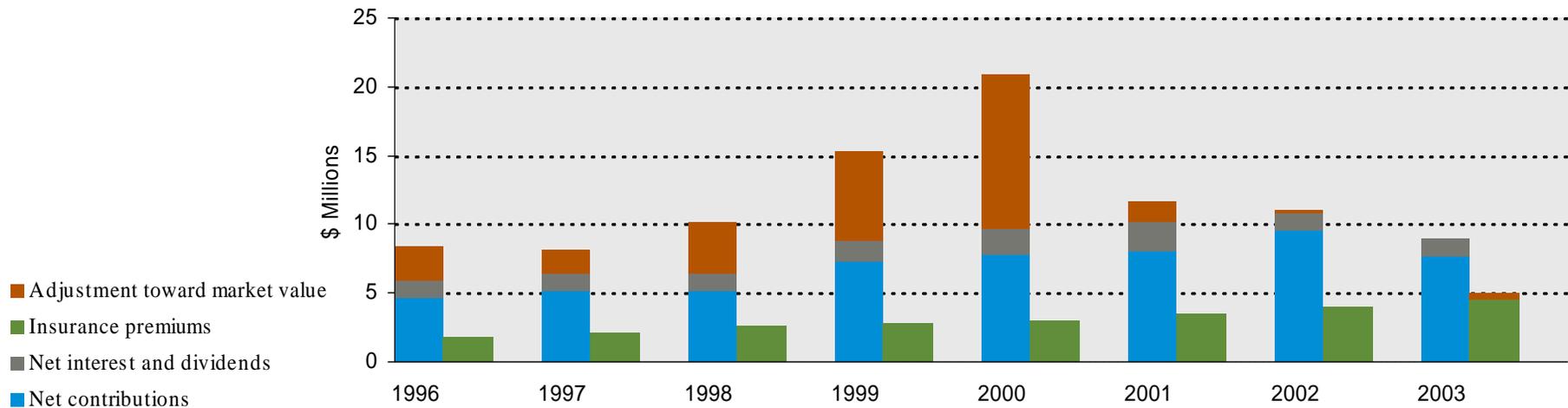


CHART 6B Insurance

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 - 2003



SECTION 2: Valuation Results for the State Police Retirement System

The chart shows the determination of the actuarial value of assets as of the valuation date

CHART 7A Retirement

Determination of Actuarial Value of Assets for Year Ended June 30, 2003

1. Actuarial Value, June 30, 2002			\$438,955,465
2. Net Cash flow			(23,603,232)
3. Expected return on valuation assets			35,240,193
4. Expected valuation assets			450,592,425
5. Investment gain/(loss) for year ending:	Initial Amount	Amortization	
June 30, 2003	(\$21,265,059)	(\$4,253,012)	
June 30, 2002	(51,918,114)	(10,383,623)	
June 30, 2001	(114,461,071)	<u>(22,892,214)</u>	
Total amortization amount			(\$37,528,849)
6. Actuarial value of assets as of June 30, 2003			<u>\$413,063,576</u>
7. Market value of assets			\$319,116,232
8. Actuarial value as a percentage of market value			<u>129.4%</u>

SECTION 2: Valuation Results for the State Police Retirement System

The chart shows the determination of the actuarial value of assets as of the valuation date

CHART 7B Insurance

Determination of Actuarial Value of Assets for Year Ended June 30, 2003

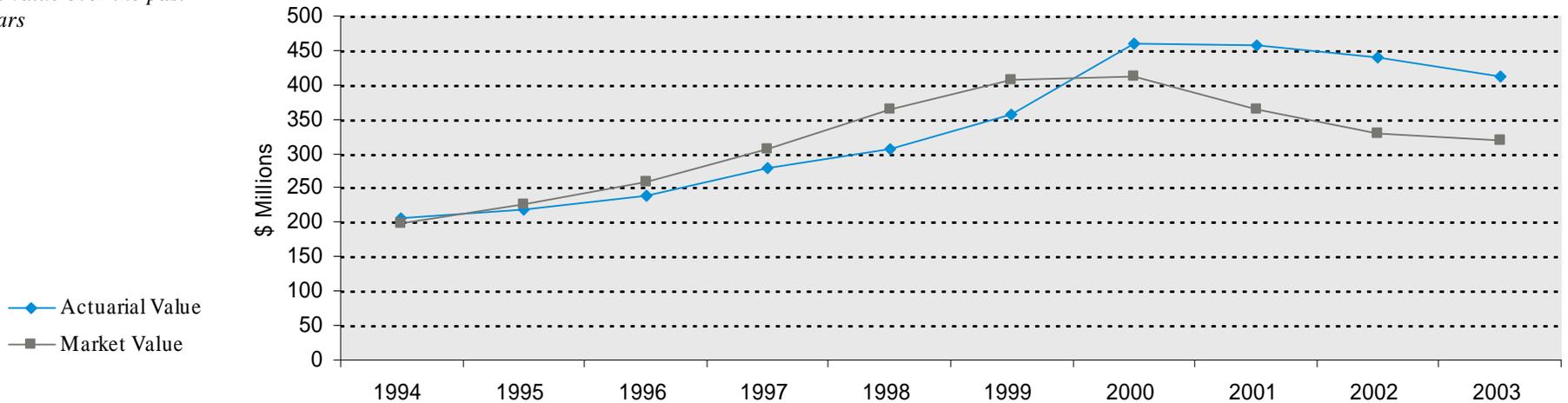
1. Actuarial Value, June 30, 2002			\$86,867,391
2. Net Cash flow			3,086,238
3. Expected return on valuation assets			7,293,867
4. Expected valuation assets			97,247,496
5. Investment gain/(loss) for year ending:	Initial Amount	Amortization	
June 30, 2003	(\$5,900,932)	(\$1,180,186)	
June 30, 2002	(14,174,603)	(2,834,921)	
June 30, 2001	(12,422,108)	<u>(2,484,422)</u>	
Total amortization amount			(\$6,499,529)
6. Actuarial value of assets as of June 30, 2003			<u>\$90,747,967</u>
7. Market value of assets			\$72,553,617
8. Actuarial value as a percentage of market value			<u>125.1%</u>

SECTION 2: Valuation Results for the State Police Retirement System

This chart shows the change in the actuarial value of assets versus the market value over the past ten years

CHART 8A Retirement

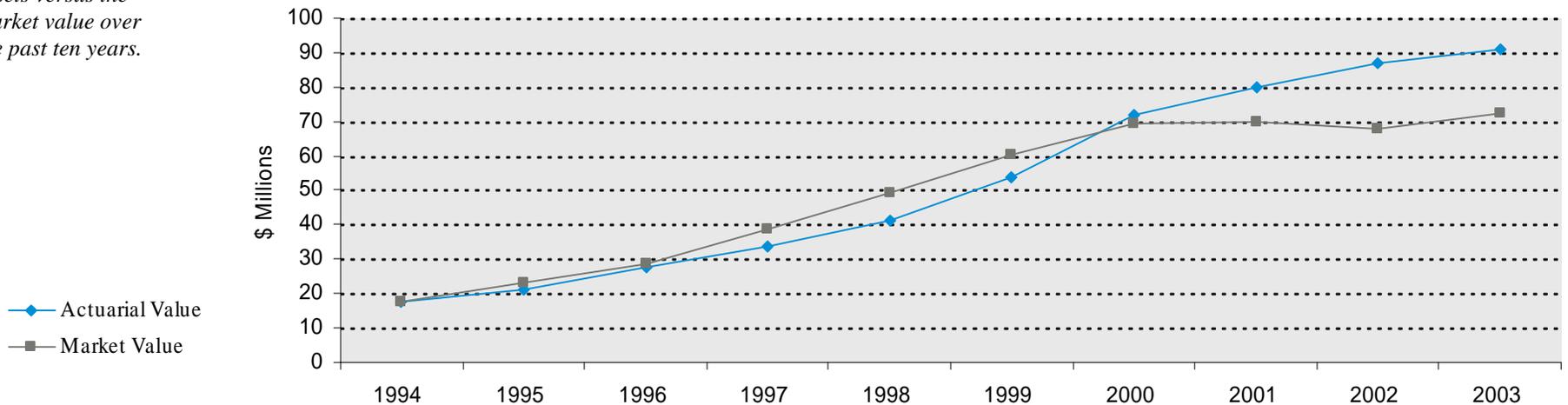
Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1994 – 2003



This chart shows the change in the actuarial value of assets versus the market value over the past ten years.

CHART 8B Insurance

Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1994 – 2003



SECTION 2: Valuation Results for the State Police Retirement System

C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

Chart 9 presents a summary of experience for the year. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience during the past year.

**CHART 9
Actuarial Experience for Year Ended
June 30, 2003**

	Retirement	Insurance
1. Net gain/(loss) from investments*	-\$37,528,850	-\$6,499,529
2. Net gain/(loss) from administrative expenses	5,929	-18,185
3. Net gain/(loss) from other experience**	<u>-23,694,947</u>	<u>-3,094,271</u>
4. Net experience gain/(loss): (1) + (2) + (3)	-\$61,217,868	-\$9,611,985

* Details in Chart 10

** Details in Chart 13

SECTION 2: Valuation Results for the State Police Retirement System

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Plan’s investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.25%. Chart 10 shows the investment experience for each plan for the year.

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. Chart 11, which follows, shows the rate of return on an actuarial basis compared to the market value investment return for the last seven years.

Since the actual return for the year was less than the assumed return, the each plan experienced an actuarial loss during the year ended June 30, 2003 with regard to its investments.

This chart shows the gain/(loss) due to investment experience.

**CHART 10
Actuarial Value Investment Experience for Year Ended
June 30, 2003**

	Retirement	Insurance
1. Actual return	-\$2,288,657	\$794,338
2. Average value of assets	427,153,849	88,410,510
3. Actual rate of return: (1) ÷ (2)	-0.54%	0.90%
4. Assumed rate of return	8.25%	8.25%
5. Expected return: (2) x (4)	\$35,240,193	\$7,293,867
6. Actuarial gain/(loss): (1) – (5)	<u>-\$37,528,850</u>	<u>-\$6,499,529</u>

SECTION 2: Valuation Results for the State Police Retirement System

CHART 11A Retirement

Investment Return – Actuarial Value vs. Market Value: 1996 - 2003

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1996	\$9,339,000	4.38%	\$19,677,903	9.24%	\$29,016,903	13.62%	\$39,650,476	17.81%
1997	10,892,000	4.66	38,726,929	16.57	49,618,929	21.23	56,720,285	22.33
1998	11,038,000	4.03	26,511,643	9.67	37,549,643	13.69	67,163,306	22.27
1999	10,655,000	3.56	54,221,278	18.10	64,876,278	21.66	56,848,150	15.94
2000	11,938,000	3.40	103,301,378	29.45	115,239,378	32.85	18,631,485	4.66
2001	12,131,000	2.69	2,093,280	0.46	14,224,280	3.16	-29,707,210	-7.37
2002	11,567,921	2.59	-8,064,723	-1.81	3,503,198	0.79	-15,336,844	-4.33
2003	<u>9,860,621</u>	2.31	<u>-12,149,278</u>	-2.84	<u>-2,288,657</u>	-0.54	<u>13,761,273</u>	4.34
Total	\$87,421,542		\$224,318,410		\$311,739,952		\$207,730,921	
					Average return	9.91%		2.41%

Note: Each year's yield is weighted by the average asset value in that year.

SECTION 2: Valuation Results for the State Police Retirement System

CHART 11B Insurance

Investment Return – Actuarial Value vs. Market Value: 1996 - 2003

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1996	\$1,349,000	5.97%	\$2,453,072	10.85%	\$3,802,072	16.82%	\$3,042,531	12.45%
1997	1,293,000	4.41	1,814,216	6.19	3,107,216	10.61	6,753,913	22.25
1998	1,344,000	3.83	3,687,017	10.50	5,031,017	14.32	8,320,673	20.88
1999	1,537,000	3.52	6,490,359	14.87	8,027,359	18.39	6,577,625	12.73
2000	1,878,000	3.33	11,119,853	19.74	12,997,853	23.08	4,144,524	6.59
2001	2,084,000	2.82	1,534,784	2.07	3,618,784	4.89	-4,023,535	-5.61
2002	1,283,315	1.55	213,261	0.26	1,496,576	1.81	-7,387,596	-10.16
2003	<u>1,296,362</u>	1.47	<u>-502,024</u>	-0.57	<u>794,338</u>	0.90	<u>1,360,031</u>	1.95
Total	\$12,064,677		\$26,810,538		\$38,875,215		\$18,788,166	
					Average return	7.81%		0.20%

Note: Each year's yield is weighted by the average asset value in that year.

SECTION 2: Valuation Results for the State Police Retirement System

This chart illustrates how this leveling effect has actually worked over the years 1996 - 2003.

CHART 12A Retirement

Market and Actuarial Rates of Return for Years Ended June 30, 1996 - 2003

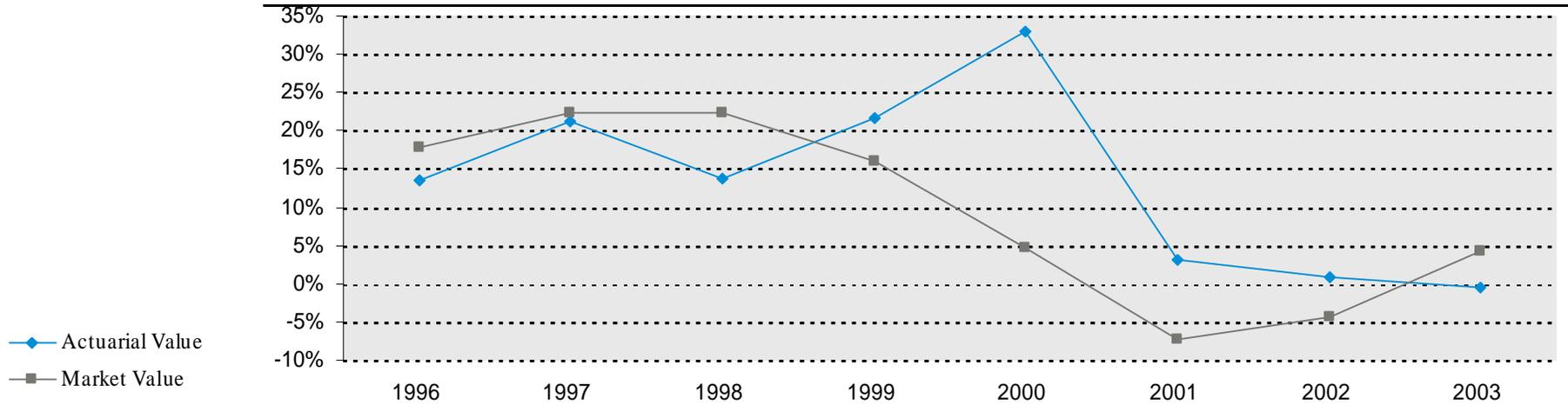
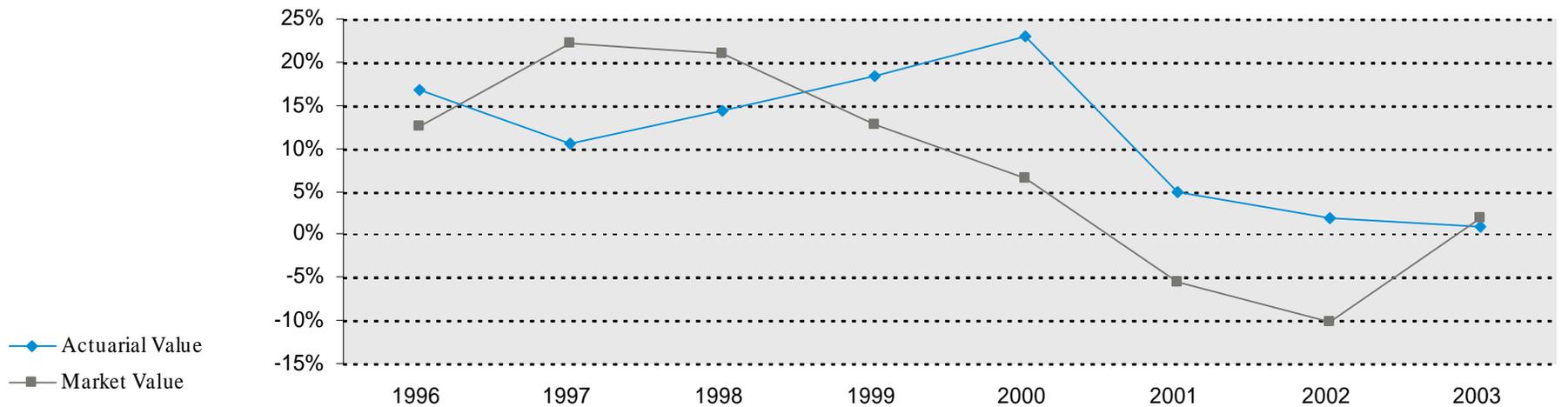


CHART 12B Insurance

Market and Actuarial Rates of Return for Years Ended June 30, 1996 - 2003



SECTION 2: Valuation Results for the State Police Retirement System

Administrative Expenses

Current assumptions include an assumption for the cost of administration for the retirement funds but not for the insurance funds. This assumption is modified with each valuation to estimate expenses for the upcoming fiscal year. The following summarizes the past year's experience and presents the assumptions for the next year.

Plan	Year End 2003 Assumption	Year End 2003 Actual Expense	Gain/Loss* for the Year	Year End 2004 Assumption
Retirement	\$89,883	\$84,406	\$5,929	\$89,000
Insurance	\$-0-	\$-0-	\$-0-	\$-0-

* Includes interest to year-end.

SECTION 2: Valuation Results for the State Police Retirement System

Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- COLA's granted in the year,
- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),

- mortality (more or fewer deaths than expected),
- the number of disability retirements, and
- salary increases different than assumed.

A brief summary of the demographic gain/(loss) experience of the Fund's for the year ended June 30, 2003 is shown in the chart below

The chart shows elements of the experience gain/(loss) for the most recent year.

**CHART 13
Experience Due to Changes in
Demographics for Year Ended
June 30, 2003**

	Retirement	Insurance
1. COLA	-\$8,252,449	N/A
2. Other	-15,442,499	N/A
3. Total	<u>-\$23,694,948</u>	<u>-\$3,094,271</u>
4. Percentage of Actuarial Accrued Liability	5.7%	1.9%

SECTION 2: Valuation Results for the State Police Retirement System

D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded/(overfunded) actuarial accrued liability. This total amount is then divided by the projected salaries for active members to determine the funding rate.

The recommended contribution is based on a 30-year amortization of bases established each year as specified in the law governing the Plan.

Exhibit H provides details on these amortization bases.

The contribution rates as of June 30, 2003 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions

Charts 14 and 15 present the Recommended Contributions and reconciliations from the prior valuation.

SECTION 2: Valuation Results for the State Police Retirement System

The chart compares this valuation's recommended contribution with the prior valuation.

**CHART 14 Retirement
Recommended Contribution**

	As of June 30,			
	2003		2002	
	Amount	% of Salary	Amount	% of Salary
1. Total normal cost	\$7,302,221	16.69%	\$7,661,317	17.43%
2. Administrative expenses	89,000	0.20%	89,883	0.20%
3. Expected employee contributions	<u>-3,422,969</u>	<u>-7.82%</u>	<u>-3,417,599</u>	<u>-7.77%</u>
4. Employer normal cost: (1) + (2) + (3)	\$3,968,252	9.07%	\$4,333,601	9.86%
5. Actuarial accrued liability	414,881,459		380,790,346	
6. Actuarial value of assets	<u>413,063,576</u>		<u>438,955,465</u>	
7. Unfunded/(overfunded) actuarial accrued liability: (5) - (6)	\$1,817,883		-\$58,165,119	
8. Payment on unfunded/(overfunded) actuarial accrued liability	-254,076	-0.58%	-3,169,195	-7.21%
9. Total recommended contribution: (4) + (8)	<u>\$3,714,176</u>	<u>8.49%</u>	<u>\$1,164,406</u>	<u>2.64%*</u>
10. Projected salary	\$43,760,832		\$43,961,844	

** Components of recommended contribution do not add to prior year's recommended contribution percentage due to prior actuary rounding the net normal cost and adding the rounded components.*

SECTION 2: Valuation Results for the State Police Retirement System

The chart reconciles the contribution from the prior valuation to the amount determined in this valuation.

CHART 15 Retirement

Reconciliation of Recommended Contribution from June 30, 2002 to June 30, 2003

Recommended Contribution as of June 30, 2002	\$1,164,406
Effect of COLA for retirees	413,437
Effect of investment (gain)/loss	1,880,146
Effect of net other changes	<u>256,187</u>
Total change	<u>\$2,549,770</u>
Recommended Contribution as of June 30, 2003	\$3,714,176

SECTION 2: Valuation Results for the State Police Retirement System

**CHART 14B Insurance
Recommended Contribution**

	As of June 30, 2003	
	Amount	% of Salary
1. Employer normal cost	\$6,508,043	14.87%
2. Actuarial accrued liability	184,501,205	
3. Actuarial value of assets	<u>90,747,967</u>	
4. Unfunded/(overfunded) actuarial accrued liability: (2) - (3)	\$93,753,238	
5. Payment on unfunded/(overfunded) actuarial accrued liability	5,499,654	12.57%
6. Full EANC Contribution: (1) + (5)	<u>\$12,907,697</u>	<u>27.44%</u>
7. Projected salary	\$43,760,832	
8. Prior year's funding rate	N/A	18.94%
9. Years to reach full EANC	N/A	13 years
10. Additional amount this year	N/A	.65%
11. Total recommended contribution rate	N/A	19.59%

SECTION 3: Supplemental Information for the State Police Retirement System

EXHIBIT A

Table of Plan Coverage

Category	Year Ended June 30		Change From Prior Year
	2003	2002	
Active members in valuation:			
Number	1,019	1,002	1.7%
Average age	35.9	43.0	N/A
Average service	10.9	11.4	N/A
Total salary	\$43,760,832	\$43,961,844	-0.5%
Average salary	\$42,945	\$43,874	-2.1%
Account balances	\$35,832,095	0	N/A
Number with unknown age and/or service information	0	0	N/A
Total active vested members	763	696	9.6%
Vested terminated members	21	20	5.0%
Retired participants:			
Number in pay status	792	773	2.5%
Average age	58.8	N/A	N/A
Average monthly benefit	\$2,655	N/A	N/A
Disabled members:			
Number in pay status	34	46	26.1%
Average age	53.2	N/A	N/A
Average monthly benefit	\$1,357	N/A	N/A
Beneficiaries in pay status	115	78	47.4%
Inactive nonvested members due a refund	92	83	10.8%

SECTION 3: Supplemental Information for the State Police Retirement System

EXHIBIT B

**Members in Active Service as of June 30, 2003
By Age, Years of Service, and Average Salary**

Age	Years of Service								
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39
Under 25	96	96	--	--	--	--	--	--	--
	\$21,577	\$21,577	--	--	--	--	--	--	--
25 - 29	148	120	28	--	--	--	--	--	--
	32,450	31,088	\$38,285	--	--	--	--	--	--
30 - 34	265	78	147	40	--	--	--	--	--
	38,548	30,700	40,924	\$45,120	--	--	--	--	--
35 - 39	188	16	44	98	29	1	--	--	--
	45,331	29,606	40,782	48,089	\$51,162	\$57,648	--	--	--
40 - 44	151	5	9	44	56	37	--	--	--
	50,956	27,614	39,868	47,957	53,604	56,365	--	--	--
45 - 49	109	1	1	2	24	61	19	1	--
	57,087	28,272	37,392	45,768	53,018	57,885	\$62,849	\$67,752	--
50 - 54	52	--	--	1	--	11	26	12	2
	67,089	--	--	47,604	--	59,155	68,149	71,272	\$81,594
55 - 59	8	--	--	--	--	--	1	5	2
	83,628	--	--	--	--	--	104,220	76,894	90,168
60 - 64	1	--	1	--	--	--	--	--	--
	44,352	--	44,352	--	--	--	--	--	--
70 & over	1	1	--	--	--	--	--	--	--
	30,696	30,696	--	--	--	--	--	--	--
Total	1,019	317	230	185	109	110	46	18	4
	\$42,945	\$27,973	\$40,534	\$47,388	\$52,825	\$57,499	\$66,744	\$72,638	\$85,881

SECTION 3: Supplemental Information for the State Police Retirement System

EXHIBIT C Retirement

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended June 30, 2003	Year Ended June 30, 2002
Contribution income:		
Employer contributions	-\$20,061	-\$17,643
Member contributions	4,673,538	4,417,691
Less administrative expenses	<u>-84,406</u>	<u>-75,908</u>
Net contribution income	\$4,569,071	\$4,324,140
Investment income:		
Interest, dividends and other income	\$10,740,596	\$13,228,921
Adjustment toward market value	-11,935,418	-7,866,958
Less investment fees	<u>-1,093,835</u>	<u>-1,858,765</u>
Net investment income	<u>-2,288,657</u>	<u>3,503,198</u>
Total income available for benefits	\$2,280,414	\$7,827,338
Less benefit payments:		
Benefit payments	\$27,861,736	\$24,839,051
Net refunds	<u>96,707</u>	<u>-4,234</u>
Net benefit payments	\$27,958,443	\$24,834,817
Change in reserve for future benefits	-\$25,678,029	-\$17,007,479

SECTION 3: Supplemental Information for the State Police Retirement System

EXHIBIT C Insurance

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended June 30, 2003	Year Ended June 30, 2002
Contribution income:		
Employer contributions	\$7,654,313	\$9,579,899
Less administrative expenses	<u>-16,799</u>	<u>-29,022</u>
Net contribution income	\$7,637,514	\$9,550,877
Investment income:		
Interest, dividends and other income	\$1,449,917	\$1,490,315
Adjustment toward market value	-469,120	242,172
Less investment fees	<u>-186,459</u>	<u>-235,911</u>
Net investment income	<u>794,338</u>	<u>1,496,576</u>
Total income available for benefits	\$8,431,852	\$11,047,453
Less healthcare premium subsidies:	\$4,518,372	\$4,014,728
Change in reserve for future benefits	\$3,913,480	\$7,032,725

SECTION 3: Supplemental Information for the State Police Retirement System

**EXHIBIT D Retirement
Table of Financial Information**

	Year Ended June 30, 2003	Year Ended June 30, 2002
Cash equivalents	\$134,759	\$1,266,331
Accounts receivable:		
Investment accounts receivable	\$9,593	\$10,000
Year end interest receivable	1,776,874	2,175,000
Year end accounts receivable	<u>1,024,040</u>	<u>1,073,000</u>
Total accounts receivable	2,810,507	3,258,000
Investments:		
Bonds	\$116,788,407	\$114,103,000
Stocks	173,423,546	171,937,000
Mortgage	16,969,831	19,485,000
Real Estate	823,917	1,015,000
Fixed Assets	6,070	0
Short-term Investments	<u>8,285,357</u>	<u>17,843,000</u>
Total investments at market value	<u>316,297,128</u>	<u>324,383,000</u>
Total assets	\$319,242,394	\$328,907,331
Less accounts payable:	-\$126,162	-\$163,000
Net assets at market value	<u>\$319,116,232</u>	<u>\$328,744,331</u>
Net assets at actuarial value	<u>\$413,063,576</u>	<u>\$438,955,465</u>

SECTION 3: Supplemental Information for the State Police Retirement System

EXHIBIT D Insurance

Table of Financial Information

	Year Ended June 30, 2003	Year Ended June 30, 2002
Cash equivalents	\$13,831	\$983,444
Accounts receivable:		
Investment accounts receivable	\$2,431	\$4,000
Year end interest receivable	199,642	182,000
Year end accounts receivable	<u>651,033</u>	<u>805,000</u>
Total accounts receivable	853,106	991,000
Investments:		
Bonds	\$8,247,080	\$7,413,000
Stocks	59,192,228	54,026,000
Short-term Investments	<u>4,282,323</u>	<u>4,706,000</u>
Total investments at market value	<u>71,721,631</u>	<u>66,145,000</u>
Total assets	\$72,588,568	\$68,119,444
Less accounts payable:	-\$34,951	-\$45,000
Net assets at market value	<u>\$72,553,617</u>	<u>\$68,074,444</u>
Net assets at actuarial value	<u>\$90,747,967</u>	<u>\$86,867,391</u>

SECTION 3: Supplemental Information for the State Police Retirement System

EXHIBIT E Retirement

Development of the Fund Through June 30, 2003

Year Ended June 30	Employer Contributions	Member Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
1996	\$7,089,000	\$2,457,000	\$29,016,903	\$204,000	\$18,348,000	\$237,515,346
1997	9,628,000	2,958,000	49,618,929	212,000	19,865,000	279,643,275
1998	9,574,000	2,711,000	37,549,643	234,000	22,925,000	306,318,918
1999	9,463,000	3,658,000	64,876,278	214,000	26,479,000	357,623,196
2000	10,216,000	4,202,000	115,239,378	239,000	27,873,000	459,168,574
2001	1,516,267	4,138,298	14,224,280	214,171	22,672,539	456,160,709
2002	-17,643	4,417,691	3,503,198	273,673	24,834,817	438,955,465
2003	-20,061	4,673,538	-2,288,657	298,266	27,958,443	413,063,576

* Net of investment fees

SECTION 3: Supplemental Information for the State Police Retirement System

EXHIBIT E Insurance

Development of the Fund Through June 30, 2003

Year Ended June 30	Employer Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
1996	\$4,604,000	\$3,802,072	\$6,000	\$1,791,000	\$27,809,267
1997	5,126,000	3,107,216	6,000	2,160,000	33,876,483
1998	5,120,000	5,031,017	6,000	2,611,000	41,410,500
1999	7,252,000	8,027,359	13,000	2,747,000	53,929,859
2000	7,818,000	12,997,853	20,000	3,014,000	71,711,712
2001	8,113,391	3,618,784	34,638	3,545,672	79,863,577
2002	9,579,899	1,496,576	57,933	4,014,728	86,867,391
2003	7,654,313	794,338	49,703	4,518,372	90,747,967

* Net of investment fees

SECTION 3: Supplemental Information for the State Police Retirement System

EXHIBIT F Retirement

Table of Amortization Bases

Date Established	Initial Years	Initial Amount	Annual Payment*	Years Remaining	Outstanding Balance
06/30/1990	30	\$8,982,071	\$844,116	17.00	\$11,370,355
06/30/1991	30	9,963,656	892,569	18.00	12,554,629
06/30/1992	30	-24,502,117	-2,092,290	19.00	-30,638,282
06/30/1993	30	-3,706,436	-301,693	20.00	-4,586,877
06/30/1994	30	10,380,135	805,374	21.00	12,682,486
06/30/1995	30	22,729,292	1,680,973	22.00	27,357,054
06/30/1996	30	-17,793,855	-1,254,355	23.00	-21,055,496
06/30/1997	30	-31,021,470	-2,082,684	24.00	-35,992,855
06/30/1998	30	12,716,788	813,110	25.00	14,443,356
06/30/1999	30	-31,317,924	-1,907,111	26.00	-34,766,242
06/30/2000	30	-77,707,399	-4,506,673	27.00	-84,195,831
06/30/2001	30	26,106,163	1,441,941	28.00	27,572,180
06/30/2002	30	44,465,495	2,339,045	29.00	45,722,438
06/30/2003	30	61,350,968	<u>3,073,602</u>	30.00	<u>61,350,968</u>
Total			-\$254,076		\$1,817,883

* Level percentage of salary

SECTION 3: Supplemental Information for the State Police Retirement System

EXHIBIT F Insurance

Table of Amortization Bases

Date Established	Initial Years	Initial Amount	Annual Payment*	Years Remaining	Outstanding Balance
06/30/1996	30	\$73,323,619	\$5,168,853	23.00	\$86,763,954
06/30/1997	30	8,088,952	543,067	24.00	9,385,259
06/30/1998	30	-2,668,212	-170,605	25.00	-3,030,476
06/30/1999	30	-13,378,283	-814,673	26.00	-14,851,324
06/30/2000	30	-6,431,546	-373,000	27.00	-6,968,569
06/30/2001	30	9,773,380	539,820	28.00	10,322,213
06/30/2002	30	-1,482,959	-78,009	29.00	-1,524,879
06/30/2003	30	13,657,060	<u>684,201</u>	30.00	<u>13,657,060</u>
Total			\$5,499,654		\$93,753,238

* Level percentage of salary

SECTION 3: Supplemental Information for the State Police Retirement System

EXHIBIT G

Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial

Assumptions:

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Normal Cost:

The amount of contributions required to fund the benefit allocated to the current year of service.

Actuarial Accrued Liability

For Actives:

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial Accrued Liability

For Pensioners:

The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Unfunded Actuarial Accrued

Liability:

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

SECTION 3: Supplemental Information for the State Police Retirement System

Amortization of the Unfunded

Actuarial Accrued Liability: Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

Investment Return:

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

SECTION 4: Reporting Information for the State Police Retirement System

EXHIBIT I – Retirement

Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 115 beneficiaries in pay status)		941
2. Members inactive during year ended June 30, 2003 with vested rights		21
3. Members active during the year ended June 30, 2003		1,019
Fully vested	763	
Not vested	256	
4. Inactive nonvested members due a refund as of June 30, 2003		92

The actuarial factors as of the valuation date are as follows:

1. Normal cost, including administrative expenses		\$7,391,221
2. Present value of future benefits		488,418,021
3. Present value of future normal costs		73,536,562
4. Actuarial accrued liability		414,881,459
Retired participants and beneficiaries	\$289,559,607	
Inactive members with vested rights	368,644	
Active members	124,868,667	
Inactive nonvested members due a refund	84,541	
5. Actuarial value of assets (\$319,116,232 at market value as reported by Carpenter, Mountjoy & Bressler, PSC)		413,063,576
6. Unfunded actuarial accrued liability		\$1,817,883

SECTION 4: Reporting Information for the State Police Retirement System

EXHIBIT I – Insurance

Summary of Actuarial Valuation Results

The actuarial factors as of the valuation date are as follows:

1. Normal cost, including administrative expenses		\$6,508,043
2. Present value of future benefits		255,287,884
3. Present value of future normal costs		70,786,679
4. Actuarial accrued liability		184,501,205
Retired participants and beneficiaries	\$105,482,674	
Inactive members with vested rights	835,076	
Active members	78,183,455	
5. Actuarial value of assets (\$72,553,617 at market value as reported by Carpenter, Mountjoy & Bressler, PSC)		90,747,967
6. Unfunded actuarial accrued liability		\$93,753,238

SECTION 4: Reporting Information for the State Police Retirement System

EXHIBIT II – Retirement

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/Overfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
06/30/1996	\$237,515,346	\$244,540,812	\$7,025,466	97.13%	\$34,698,957	20.25%
06/30/1997	279,643,275	255,784,758	-23,858,517	109.33	41,586,211	-57.37
06/30/1998	306,318,918	294,427,019	-11,891,899	104.04	38,727,361	-30.71
06/30/1999	357,623,196	314,021,673	-43,601,523	113.88	40,433,405	-107.84
06/30/2000	459,168,574	336,579,763	-122,588,811	136.42	43,619,383	-281.04
06/30/2001	456,160,709	356,211,860	-99,948,849	128.06	44,646,678	-223.87
06/30/2002	438,955,465	380,790,346	-58,165,119	115.27	44,314,696	-131.25
06/30/2003	413,063,576	414,881,459	1,817,883	99.56	43,760,832	4.15

SECTION 4: Reporting Information for the State Police Retirement System

EXHIBIT II – Insurance

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/Overfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
06/30/1996	\$27,809,267	\$101,132,886	\$73,323,619	27.50%	\$34,698,957	211.31%
06/30/1997	33,876,483	117,361,754	83,485,271	28.87	41,586,211	200.75
06/30/1998	41,410,500	124,501,076	83,090,576	33.26	38,727,361	214.55
06/30/1999	53,929,859	125,797,150	71,867,291	42.87	40,433,405	177.74
06/30/2000	71,711,712	138,867,085	67,155,373	51.64	43,619,383	153.96
06/30/2001	79,863,577	158,261,479	78,397,902	50.46	44,646,678	175.60
06/30/2002	86,867,391	165,445,412	78,578,021	52.51	44,314,696	177.32
06/30/2003	90,747,967	184,501,205	93,753,238	49.19	43,760,832	214.24

SECTION 4: Reporting Information for the State Police Retirement System

EXHIBIT III

Supplementary Information Required by the GASB

Valuation date	June 30, 2003
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Level percent of salary
Remaining amortization period	17 to 30 years
Asset valuation method	5 year smoothing method

Actuarial assumptions:

Investment rate of return	8.25%
Payroll growth	5.00%

Plan membership:

Retired participants and beneficiaries receiving benefits	941
Terminated members entitled to, but not yet receiving benefits	21
Active members	<u>1,019</u>
Total	1,981

SECTION 4: Reporting Information for the State Police Retirement System

**EXHIBIT III (continued)
Supplementary Information Required by the GASB**

Age	Contracts in Force – Retirees and Dependents					
	Total	100% Paid	75% Paid	50% Paid	25% Paid	0% Paid
Single; Pre-Medicare	218	209	2	6	--	1
Family; Pre-Medicare	141	141	--	--	--	--
Parent Plus; Pre-Medicare	44	43	--	--	1	--
Couple; Pre-Medicare	243	240	3	--	--	--
Medicare Regular	13	8	4	4	1	--
Medicare High Option	<u>312</u>	<u>305</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>--</u>
Total	971	946	9	11	4	1

SECTION 4: Reporting Information for the State Police Retirement System

EXHIBIT IV

Actuarial Assumptions and Actuarial Cost Method

Mortality Rates:

Healthy: 1983 Group Annuity Mortality Table with margins plus 0.05% per year.
Disabled: Pension Benefit Guaranty Corporation Table for Disabled Lives Receiving Social Security plus 0.05% per year.

Age	Termination Rates before Retirement: <u>Rate (%)</u>			
	Mortality		Disability	Withdrawal
	Male	Female		
20	0.09	0.07	0.04	1.82
25	0.10	0.08	0.04	1.82
30	0.11	0.08	0.05	2.03
35	0.14	0.10	0.07	1.46
40	0.17	0.12	0.13	0.96
45	0.27	0.15	0.26	0.45
50	0.44	0.21	0.53	0.00
55	0.66	0.30	0.99	0.00
60	0.97	0.47	1.74	0.00

Retirement Rates: 60% will retire as soon as eligible for unreduced benefit and balance will continue until age 55.

Retirement Age for Inactive Vested Participants: 55

Percent Married: 100%

Age of Spouse: Females 3 years younger than males.

SECTION 4: Reporting Information for the State Police Retirement System

Dependent Children: For duty related death benefits, it is assumed that the employee is survived by two dependent children each age 6.

Net Investment Return: 8.25%

Salary Increases:	Years of Service	Rate (%)
	1	12.00
	2	10.00
	3	8.00
	4 or more	6.50

Payroll Growth: 5.0%

Retiree Medical Insurance Election: Future retirees will select medical coverage in the same proportion that current retirees have selected coverage.

Monthly Contribution Rates:	Pre-Medicare Coverage			
	Rate in Effect on Valuation Date			
	<u>Single</u>	<u>Family</u>	<u>Parent Plus</u>	<u>Couple</u>
Region 1	\$278.76	\$627.24	\$376.32	\$564.52
Region 2	292.00	657.04	394.24	591.32
Region 3	397.08	893.56	536.12	804.20
Region 4	269.44	606.40	363.84	545.76
	<u>Medicare Rate</u>		<u>Contracts in Force</u>	
<u>Carrier</u>	<u>Low Option</u>	<u>High Option</u>	<u>Low Option</u>	<u>High Option</u>
Anthem Blue Seniors	\$103.18	\$286.53	3,329	20,772
Anthem Blue Seniors Network	98.18	281.53	539	1,701
Barkers Life Medicare	82.70	195.35	732	410

SECTION 4: Reporting Information for the State Police Retirement System

	Weighted Medicare Coverage Rate in Effect on Valuation Date	
	<u>Low Option</u>	<u>High Option</u>
All Members	\$99.34	\$284.52

Medical Contribution Rate Increases:	<u>Year</u>	<u>Rate(%)</u>
	2003-2005	10.00
	2006-2010	9.00
	2011-2015	8.00
	2016-2020	7.50
	2021 and thereafter	7.00

Members with Multiple Service Records: For active members with service in more than one system, the liability has been valued as follows:

- Service under all systems is aggregated for purposes of determining benefit eligibility.
- Future service is projected only under the system in which the member is currently active.
- The actual benefit under each system is determined based only on service (past and projected future service, if applicable) under that system.
- The liability is determined under each system based on the actuarial assumptions used for the system in which the member is currently active. This liability is then included in the valuation of the system in which the service has been earned (or is projected to be earned).

For inactive members with service in more than one system, the benefit attributable to the service under each system is determined, and the liability for that benefit is then included in the valuation of the system in which the service was earned.

SECTION 4: Reporting Information for the State Police Retirement System

Administrative Expenses: \$89,000

Actuarial Value of Assets: Sum of expected valuation assets and amortization of the investment gains/(losses) from the current and four prior years. Expected valuation assets is equal to the actuarial value at the beginning of the year plus the expected return on assets using the assumed valuation interest rate from the prior year plus actual cash flows from the prior year. The current year investment gain/(loss) is determined as the difference between actual market value and expected actuarial value less any unamortized portions of the gain/(loss) from the previous four years.

Actuarial Cost Method: Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by service, with Normal Cost determined as if the current benefit accrual rate had always been in effect.

SECTION 4: Reporting Information for the State Police Retirement System

EXHIBIT V

Summary of Plan Provisions

This exhibit summarizes the major provisions of the System included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year: June 30 through June 30

Normal Retirement:

Age Requirement 55

Service Requirement None

Amount If a member has at least 60 months of service, the monthly benefit is 2.50% times final average compensation times years of service.

Final compensation is the average salary during the three highest paid fiscal years. If the months of service credit during the highest three-year period is less than twenty-four, one or more additional fiscal years shall be used.

If a member has less than 60 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest.

Early Retirement:

Requirement Age 50 with 15 years of service or any age with 20 years service

Amount Normal retirement benefit reduced by 5.5% per year for each year the member is younger than age 55 or has less than 20 years service, whichever is smaller.

SECTION 4: Reporting Information for the State Police Retirement System

Disability:

<i>Age Requirement</i>	None
<i>Service Requirement</i>	60 months
<i>Amount</i>	Normal retirement benefit except that service credit will be added to total service for the period from the last day of plan employment to the member's 55 th birthday or until the combined total service as of the last day of paid employment and added service equals 20 years. The maximum amount of service credit added shall not exceed the member's actual service credit on the last day of paid employment. For employees with 20 or more years of service credit, actual service credit will be used. A contributing member in a hazardous position who is disabled in the line of duty is entitled to a retirement benefit of not less than 25% of the member's final monthly rate of pay plus 10% of the member's final monthly rate of pay for each dependent child. The maximum dependent child's benefit is 40% of the member's final monthly rate of pay.

Vesting:

<i>Age Requirement</i>	None
<i>Service Requirement</i>	60 months
<i>Amount</i>	Normal retirement benefit deferred to normal retirement age or reduced benefit payable at early retirement age.
<i>Normal Retirement Age</i>	55

Pre-Retirement Death Benefit (not in line of duty):

<i>Requirement</i>	Any age with 60 months service or age 65 with 48 months service.
<i>Amount</i>	Benefit equal to benefit member would have received had the member retired on the day before the date of death and elected a 100% joint and survivor form. Benefit is actuarially reduced if member is less than age 55 at date of death.

SECTION 4: Reporting Information for the State Police Retirement System

Spouse's Pre-Retirement Death Benefit (in line of duty):

<i>Requirement</i>	None
<i>Amount</i>	The spouse may choose (1) a \$10,000 lump sum payment and monthly payments of 25% of the member's final monthly rate of pay or (2) benefits based on the member's age, years of service and final compensation at date of death.

Dependent Non – Spouse's Death Benefit (in line of duty):

<i>Requirement</i>	None
<i>Amount</i>	The non-spouse may choose (1) a \$10,000 lump sum payment or (2) benefits based upon the member's age, years of service and final compensation at date of death.

Dependent Child's Death Benefit (in line of duty):

<i>Requirement</i>	None
<i>Amount</i>	10% of member's final monthly rate of pay up to a maximum of 40%.

Post-Retirement Death Benefit:

<i>Lump - sum Benefit</i>	\$5,000
<i>Husband and Wife</i>	The choice of payment option selected by the member will determine the monthly benefits provided to the beneficiary upon the member's death.

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